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EDITORIAL NOTICES

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Editorial Notes

RATHER unwillingly we feel impelled to call attention to a serious state of affairs in the world of archaeology, namely, unpublished excavations. This is a matter which concerns us all, whether we ourselves direct the excavations or whether, as members of the general public, we provide the money (and nowadays often the labour too) for carrying them out; and it also concerns the Governments and archaeological bodies which administer the funds. No country is guiltless in the matter, but some are more guilty than others, whether through their Governments or by the default of individual excavators. The British Government has done much to atone for its past shortcomings in publishing a magnificent volume on the work done at Jarlshof, in Shetland, by the Ancient Monuments Division of the Ministry of Works (*Excavations at Jarlshof*, by J. R. C. Hamilton, H.M. Stationery Office, £3 3s.); in one of our next numbers we shall publish an article in which Sir Mortimer Wheeler will review this book. Thus rather belatedly we fall into step with those other countries which have for long past published similar official reports.



But those foreign volumes do not cover more than a very few of the actual excavations carried out. The store-rooms of museums in various parts of the world are crammed with crates of objects from excavations, mouldering unseen and unpublished. Excavators go from one site to another without leaving themselves time to prepare proper reports. The same thing happens (with more excuse) in the case of overworked officials of, for example, the Italian and Greek archaeological services, who often simply have not the time to write their reports because of their multifarious administrative duties. They are called in quick succession from one site to another, from a medieval site perhaps to a neolithic one of entirely different character and presenting wholly different problems. However anxious to do what is required, they are unable to cope. Each year the Greek archaeological service publishes summaries of work done under its auspices; but these are necessarily short and not fully illustrated or documented. Similar summaries appear in English under the title *Archaeology in Greece*, prepared by the British School at Athens and published as a supplement to the *Journal of Hellenic Studies*. Similar summaries in French are published in the *Bulletin de Correspondance Hellénique*, and (for Italy) in German in the *Archäologischer Anzeiger*. For fuller reports of Greek excavations we must consult the official publications, but those published usually fall far behind the best modern standards, and of course many excavations (and not always those which are the most interesting) never see the light of day even in this form.

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Many of the most important excavations in Greece are conducted by the foreign Schools, to whom have been conceded the rights of excavation at some of the greatest sites—the Germans at Olympia and Samos; the French at Delos, Delphi, Thasos, and now Argos; the Americans in the Athenian Agora and the neighbourhood of Corinth. These great digs are on the whole adequately published, though often very slowly; and there are usually short annual reports. The definitive publications vary greatly, both in technical skill and in adequacy. The best up to date are undoubtedly those of the Germans at Olympia and the Americans in the Agora; and the French publications of architecture on their sites set a very high standard.



The trouble is that there is too much unnecessary digging—far more than can ever be properly used and digested. (By ‘unnecessary’ is meant digging on unthreatened sites.) The obvious remedy is for the authority sponsoring the work always to make provision for its full publication. It is not enough to subsidize an excavation; you must also subsidize its publication, and stipulate for it in drawing up the programme.



That great pioneer archaeologist, Sir Flinders Petrie, had some wise words to say about all this in a now almost forgotten (but still topical) book written more than half a century ago: ‘To turn over a site without making any plans, or recording the positions and relations of things, may be plundering, but it is not archaeology. To remove and preserve only the pretty and interesting pieces, and leave the rest behind unnoticed, and separated from what gave them a value and a meaning, proves the spirit of a dealer and not that of a scholar. To leave a site merely plundered, without any attempt to work out its history, to see the meaning of the remains found, or to publish what may serve future students of the place or the subject, is to throw away the opportunities which have been snatched from those who might have used them properly.’ After a sentence on incompetent excavators, he concludes that it is ‘far better to let things lie a few centuries longer under the ground, if they can be let alone, than repeat the vandalisms of past ages without the excuse of being a barbarian’ (*Methods and Aims in Archaeology*, Methuen, 1904, pp. 179–180).



Petrie was writing, of course, with Egypt foremost in his mind, and with the knowledge of how that land had suffered from treasure-hunters and tomb-robbers. In what we have said above we have been thinking rather of publication than of excavation methods. There has been an enormous advance in the latter and Petrie himself led the way to it. But his words are not wholly inapplicable to some modern excavations. One wonders what he would have thought about the remarks of a recent reviewer of Monsieur Ghirshmann’s report of his excavations in Iran (Village Perse-Achéménide); ‘The author has made the most of every piece of evidence, and the few technical omissions such as lack of a section, lack of scale on many of his photographs and some of the drawings, and lack of a key on the plans, do not seriously detract from the overall value of the volume’. Then what would?

EDITORIAL NOTES

The first article in this number of *ANTIQUITY* contains what journalists call 'hot news' of a startling new discovery ; we wish to thank Professor Cyrus Gordon, of Brandeis University, for giving our readers the first results of his latest researches. Briefly, they consist in the deciphering of those hitherto undeciphered Cretan tablets written in the script called Linear A, with the result that some of the words appear to belong to a Semitic language. Readers will remember that the other Cretan tablets, called Linear B, have recently been deciphered by the late Michael Ventris, who has proved that their language is an early form of Greek—an Indo-European language. Some of the Linear B signs are the same as some of the Linear A ones ; and with the help of these and the small conventional signs of pots and suchlike which accompany the words, Professor Gordon has succeeded in deciphering them. Thanks to his well-known work on the Ras Shamra texts, and on other Semitic ones, he has unlocked another door that had been closed for nearly half a century. Naturally his article is written in a style that will be better understood by specialists than by the general reader ; that is inevitable in the first scholarly publication of a new discovery like this. We know, however, from the letters we get that our readers do not object to a certain mixture of specialist and general articles in the same number, for we have to cater for a large and varied public. It is not often that we are so lucky as to be able to publish the first news of so important a discovery as this—one which will certainly inaugurate a long series of discussions.

Notes on Minoan Linear A

by CYRUS H. GORDON

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1. The decipherment of Linear B as Mycenaean Greek by the late Michael Ventris provides a means of reading some of the earlier non-Greek inscriptions of Crete and the Aegean. This is so because many of the signs in the Linear B syllabary have been taken over from the earlier Linear A, presumably with similar phonetic values. Out of 75 Linear A signs, 31 are conceivably derived from Cretan hieroglyphs, and no less than 54 are re-used in Linear B, according to the tabulation on p. 33 of M. Ventris and J. Chadwick, *Documents in Mycenaean Greek*, Cambridge, 1956.

2. The problem of translating the Linear A tablets is darkened by two factors. First, the tablets are mainly administrative lists and inventories, offering a limited vocabulary and virtually no sentence structure. Second, the polyphonous character of the script (whereby a syllabic sign has a whole range of phonetic values) confronts us not with the one and only correct reading intended by the scribe, but with a choice of readings in any specific instance. Thus, without any clue as to meaning, *ku-ro* could be read in Semitic as *kull-* 'all', *gûr-* 'to sojourn', *qurr-* 'coldness', etc., for *k*-signs represent also *g* and *q*¹; *r*-signs cover also *l* (as in Egyptian hieroglyphic orthography); gemination of consonants and length of vowels are not indicated, and so forth. Accordingly, identifications made on readings alone, without supporting evidence, have little chance of being correct. Etymology without contextual support is of scant value; etymology contradicted by context is worthless.

3. The question before us is: What is the language of the Linear A inscriptions? The *status quo* has been summed up thus: 'Whereas Linear Class B is revealed as Greek, Linear Class A seems to be non-Greek and, like the Cretan pictographic writing, defies all attempts at decipherment for the time being' (J. Friedrich, *Extinct Languages*, New York, 1957, p. 180).

4. There is a brighter side to the picture. The Linear B tablets tell us more or less what to look for in the Linear A tablets. Then again, the latter tablets themselves contain many clues, such as pictographic ideograms that indicate the subject matter. Finally, we have so much collateral evidence from Mesopotamia, and especially from nearby Canaan, Anatolia and Egypt, contemporary with the Linear A tablets,² that it would be strange if the language and translation of the Linear A texts were not clear within the next few years.

5. HT³ 31 provides a starting point for our investigation. That tablet is a quasi-

¹ This Semitic *q* is not the same phoneme as the *q* used in transliterating the Greek Linear B

² Linear A was used from the 17th to the 15th centuries B.C. inclusive, but for comparative purposes we may consider certain materials a few centuries earlier or later as roughly contemporary. It is probable that the 14th century tablets from Ugarit, though written somewhat after Linear A, will be of prime value in elucidating Linear A.

³ HT = Hagia Triada tablets (Linear A) published by G. Pugliese Carratelli, *Le iscrizioni preelleniche di Hagia Triada in Creta e della Grecia peninsulare = Monumenti Antichi* (Reale Accademia d'Italia) vol. XL, Puntata 4^a, Milan, 1945, col. 420-610, pl. I-XL.

NOTES ON MINOAN LINEAR A

bilingual, depicting a number of cups, jars and other vessels with their pronunciations written out syllabically above the pictograms. In other words, HT 31 supplies us with the welcome combination of sound and meaning. In line 1, a tripod has *pa₃-ra-ti*¹ written over it. All three signs are partly obliterated and it would be foolhardy to start our decipherment with this doubtful reading. Line 2 is more promising, for on it are depicted a couple of vessels with the supralinear readings *pa₂-pa₃* and *su-pu*, respectively. The latter calls to mind Ugaritic *sp* (a vessel commonly used as a measure; cf. UM⁴ §20.1349), known also from Hebrew (*saf* < **sapp-* or **sipp-*) (Zechariah 12 : 2, etc.). In line 3, a vessel with handle(s) is called *ka-ro-pa₃*. Since final *-n* is not represented graphically, the possibility comes to mind that the word may reflect what appears, in the *status absolutus* (i.e., standing alone, without any case ending), in Ugaritic as *krpn* (pronounced *karpan*⁵): a vessel from which wine is drunk in the epics. Line 3 ends with *sa ya ma na*; the last three signs resemble Ugaritic *yman* (UM, p. 140, text 51 : 1 : 43) in a passage dealing with a Caphtorian⁶ god of craftsmanship at work fashioning household articles, including vessels, in his atelier. If it turns out that Linear A *ya-ma-na* is to be equated with Ugaritic *yman*, Linear A *sa* may prove to be the Semitic relative and determinative pronoun that appears in Old Hebrew^{6a} and Akkadian as *ša* 'which, (that) of.'^{6b} In HT 31 : 5 a cup-like vessel is called *su-pa₃-ra*, with which Ugaritic *spl* may be compared. The difficulty is that Ugaritic *spl* refers to a large vessel (UM §20.1352), whereas HT 31 : 5 depicts what seems to be a cup. (Yet without scale, it is impossible to say what is small and what is large. Furthermore, ceramic discoveries are only of limited value in settling such problems because our texts generally refer to metal vessels.) The Akkadian texts from Ugarit vocalize *spl* with *a*; *sapl-*; Hebrew has *séfel* (< **sípl-*).⁷ In HT 31 : 6 a footed goblet (?) is called *pa-ta-qe*,⁸ which I am not able to identify linguistically. The fact that three out of five legible vessel names in Linear A have apparent equivalents in Ugaritic (and two of the three occur also in Hebrew) is striking. Whether all three identifications are correct, time will tell. But even if only one or two are right, connections with Canaan are indicated.

6. The complex cultural synthesis that took place in the East Mediterranean during the 2nd millennium B.C. was the product of many two-way lanes of communication. As the mainland contributed to Crete, Crete simultaneously made its contribution to the mainland. The hero of the Ugaritic Epic of Krêt (written *krt*, var. *krtn* = Krêtân)⁹ bears the name of the eponymous hero of Crete. It is hardly surprising that Krêtân is anticipated in Linear A: *ki-re-ta-na* (HT 2 : 3; 8 : a : 5; 120 : 4-5); in HT 108 : 1, it

⁴ C. H. Gordon, *Ugaritic Manual*, Rome, 1955.

⁵ See UM §20.971 for the Akkadian cognate, too.

⁶ 'Caphtor' is used in Ugaritic, the Old Testament and many other Near Eastern sources for the Aegean World, of which Crete was the hub.

^{6a} Genesis 6 : 3; Judges 5 : 7. Since *ša* is derived from an old word for 'man' (note *s* 'man' in Egyptian), it is ultimately Egypto-Semitic.

^{6b} Unless, against all expectations (but see below, §17 end), the Semitic *ʿayin* was not represented in the syllabary; in which case, *sa* could stand for *šo* 'bowl' which appears in the Ugaritic passage (51 : 1 : 42).

⁷ Vocalic interplay among *qatl-*, *qitl-* and *qutl-* forms, is common enough in Semitic.

⁸ As observed in the first footnote, *q*-syllables (according to our Linear B-style transliterations) do not represent Semitic *q*.

⁹ See Ugaritic text 125 : 39 for *krtn*. Many Ugaritic names appear, now with and now without, the *-ân* suffix; e.g., *ʾst-na-ra* = *st-na-ra-na* (UM §20.1340).

is followed by the pictographic determinative 'MAN'.¹⁰ In the Ugaritic literary scene set in Caphtor (see §5, above), *dqt* may well stand for Dicte and *kamr* for Kamares (51 : 1 : 42). Particularly in the field of arts and crafts, Caphtor was exerting influence on the East Mediterranean mainland in Linear A times.¹¹

7. Totals in Linear A tablets are introduced by the word *ku?-ro*. If the reading of the first syllable has been identified correctly with Linear B *ku*, the identification with Semitic *kull-* 'all' (§2) becomes likely.

8. HT 88 : 1 confronts us with *a-pu* followed by the pictographic determinative 'MAN + ka'. Accordingly *a-pu* may designate workers of a certain type; more specifically, members of a certain guild. I compare *apy* 'baker' in Ugaritic (UM §20 : 210; cf. p. 353 for the *apym* 'bakers' in new texts to be published by Ch. Virolleaud). In form the word is the active participle of the simple conjugation, and in some Semitic languages would appear as 'āpū (like the Akkadian participle *bānū* 'builder' from the root *bny*). For the bakers' guild, cf. Linear B *arto-poq^uoi*; note *ārtoi* in the Odyssey (Ventris and Chadwick, *op. cit.*, p. 130).

9. HT 85 : a : 1 reads *a-du-si-si* followed by 'MAN'. We may therefore be dealing with members of another guild. On line b : 5 the 'EQUINE?' determinative suggests that *a-du-si-si* may stand for 'adōn-sisi' 'owner(s) of horse(s)'.¹² This guild might include a variety of personnel involved with horse-drawn chariotry. Line a : 2 contains the rather frequent combination *da-we-da* (cf. HT 10 : a : 4; 93 : 7; 122 : 7) which may correspond to *dāwīd-*, a word occurring on the Moabite Mesha Stone and in the Mari tablets as a common noun meaning 'chief, leader', as well as in the Old Testament to designate King David. Indeed, it now appears that David was not so called from childhood, but earned the title *dāwīd-* (David) after achieving leadership. Thus it was the title of the founder of the Judean Dynasty that became his name. In HT 85 : a : 4 *ku-zu?* reminds us of Ugaritic *kzy* 'a groom (for horses)'; it appears syllabically in Akkadian writing as ^{awil}*ka-zi-e* (UM §20.900). But the vocalism as well as the identity of the signs impose caution upon us.

10. Horses were of considerable importance in the Near East throughout the 2nd millennium B.C. in the wake of the Indo-European immigrations. HT 119 also deals with horses to judge from EQUINE-*tu*¹³ in line 4. Accordingly *ku-pa₃-na-tu* (HT 119 : 3) may be the same as Ugaritic *gpm* 'harness, trappings'. The apparent difference between the last consonants is no great problem; the Linear A form would merely have the feminine plural suffix *-ātu* as against the Ugaritic masculine plural suffix *-ūma*. Such variants

¹⁰ MAN suggests that the word in question describes a kind of personelle ('Cretan'), but it could conceivably follow a personal name; cf. Linear B text 23, Ventris and Chadwick, *op. cit.*, p. 165.

¹¹ E.g., Ugaritic literature (at the beginning of the 14th century B.C.) represents the Caphtorian god of craftsmanship as long entrenched in the pantheon.

¹² The *-n* that closes the syllable is not represented orthographically (cf. *ka-ro-pa₃* = *karpan* in §5). Plurals of compound nouns can be formed in Semitic languages by pluralizing the second instead of the first noun (J. Aistleitner, *Untersuchungen zur Grammatik des Ugaritischen*, Berlin, 1954, p. 47). Thus the plural of Hebrew *bēt 'āb* 'family' is *bēt 'ābōt* 'families'; and of Ugaritic *bnš* (pronounced *bin-nāšī*) 'person' is *bnšm* (pronounced *bin-nāšīma*) 'persons'. If *a-du-si-si* is grammatically plural (though it need not be), only the second element (*si-si*) can be plural in form; cf. Akkadian *sisi* 'horses'. For the variants of this word for 'horse', which was introduced to the Near East through Indo-European channels, see UM §20.1343.

¹³ *-tu* could be the feminine ending (cf. Egyptian *ssm.t* 'horse'), so that the translation might be 'mare'.

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are common enough even within the same language; Ugaritic has both *rašm* and *rašt* for the plural of *riš* 'head' (UM §8 : 9); Hebrew has *šānīm* and *šānôt* for the plural of *šānā* 'year'. The word *gpn*, pronounced *gupan-* at Ugarit (UM §20.431) but *géfen* (< **gapn-*) in Hebrew, commonly means 'grapevine', but also designates 'harness' not only in Ugaritic, but in at least one Hebrew passage (Genesis 49 : 11), where there is a play on both meanings of the word.

11. It is possible that *ku-pa₃-nu* (HT 1 : a : 3; 3 : 6; 117 : a : 3; 122 : a : 7) is the personal name that appears at Ugarit syllabically as *^mgu-pa-na*, and alphabetically as *gpn* (UM §20.431). This name is borne not only by people, but also by one of Baal's two divine messengers (Gupan and Ugar).

12. The use of *sa* in Linear A for Sematic *ša* seems to occur in a yet unpublished identification by my friend, Emilio Peruzzi. If these words are correctly identified, it follows that Linear A *s*-syllables cover Semitic *š* polyphonously. Indeed, it seems that Linear A *s*-syllables cover a fairly wide range of Semitic sibilants: *s* (as in *a-du-si-si*; cf. §9), *š* (as just noted) *š* (as in *sa*; cf. §5), and *ś*.^{13a} The last may prove to be illustrated by the frequent *sa-ru* (HT 86 : a : 2, b : 2; 94 : b : 2), *sa-ro* (HT 9 : a : 1; 17 : 2; cf. 42 : 2) and *sa-ra₂* (*ra₂* may also stand for *ri-ya* according to Ventris and Chadwick) (HT 32 : 1; 33 : 1; 34 : 1; 93 : 4). Some or all of these forms are conceivably derived from the root *šrr*, occurring in Hebrew as *šar* 'prince, chief' and feminine *šāray* (Sarai) or *šārā* (Sarah) 'princess', and in Akkadian as *šarr-* 'king', feminine *šarrat-* 'queen'. If our suggestions on *da-we-da* (§9) and *sa-ru* are correct, this pair of words should be compared with Linear B *pa₂-si-re-u* (Greek *basileús*) and *wa-na-ka* (Greek *ānaks*) in a study of East Mediterranean kingship.

13. The use of *pe?* followed by a number may express fractions. Thus *pe? 8* (HT 123 : a : 2, 3) might mean ' $\frac{1}{8}$ ' and *pe? 4* (HT 123 : a : 5) might mean ' $\frac{1}{4}$ '. The *pa*-sign designating a measure in HT 91 : 2, 3, 4, 5 is not necessarily to be read phonetically (for it could be an ideogram for measure, like the similar *pa*-sign in Akkadian). But if the *pa*-sign in HT 91 turns out to be a monosyllabic word, *pa*, we should consider its possible lexical relationship with *pe?* in HT 123. The Semitic uniconsonantal noun for 'mouth' (*pe* in Hebrew; *pū/ī/ā* in Akkadian; written *p* in Ugaritic; cf. UM §20.1502) is used in fractional formations such as *pī šnāyim* ' $\frac{2}{3}$ ' in Hebrew (see Zechariah 13 : 8). The normal way to express fractions in Egyptian is to write *r* 'mouth' followed by a number; thus *r 4* means ' $\frac{1}{4}$ ', *r 8* ' $\frac{1}{8}$ '. If Linear A *pa* proves to stand for *pā* (the dual of 'mouth'), it should be compared with the weight *pym* that occurs in the Bible (1 Samuel 13 : 21) as well as inscribed on stone weights found in Palestinian excavations (e.g., at Beth Sur). The correct reading for *pym* is probably *pāyim* '2 mouths' = ' $\frac{2}{3}$ '. (Also *pu*, as in HT 34 : 7, and *pī*, as in HT 33 : 4, should be considered in this connection.)

14. If *pa-de* (HT 122 : 5) is a personal name, it is to be compared with *^mpa-di-i* (*Sennacherib's Annals* II : 70 in F. Delitzsch, *Assyrische Lesestücke*, 5th ed., Leipzig, 1912, p. 66), the king of the Philistine city of Ekron, who (although mentioned in connection with Sennacherib's invasion of Palestine in 701 B.C.) would thus have a Cretan name going back to Linear A times.¹⁴ East Mediterranean studies can profit from a more minute examination of the Philistines. An illustration may be welcome. It is generally recognized that the institutions of Sparta are closely related to Cretan institutions. Moreover, the Philistines migrated to Philistia from Caphtor (Amos 9 : 7, etc.), whose hub was Crete.

^{13a} And possibly also *t*; cf. §16 (*ka-sa-ru*).

¹⁴ For the long vowel *-î* in a Linear B *-e* syllable, compare *pa-de* = *padî* with *da-we-da* = *dāwid* (§9).

For this reason we can look to both the Spartans and Philistines for perpetuating elements of their common heritage. The uniqueness of the Spartan ephorate in classical Greece points clearly to its antiquity. Sparta was composed of five demes or villages: Pitanae, Messoa, Limnae, Konoura and Dyme. Scholars have inferred that the five ephors who governed Sparta numbered five because there was one ephor for each of the five communities (J. B. Bury, *History of Greece*, 3rd ed., London, 1955, p. 124). A comparison with Philistine institutions suggests that the Spartan system of five capital communities, each with a governor on the council of five that ruled the nation as a whole, was brought to Sparta from the same Caphtorian source that gave rise to the Philistine system. The Philistines too had five capital cities, each ruled by a *séren*; and the five *s^erānīm* of the Pentapolis (Gaza, Ashdod, Ascalon, Gath and Ekron) constituted the governing body of the nation (Joshua 13:3; 1 Samuel 6:4, 16-17). There were other cities in both the Spartan and Philistine states, but the capital communities were limited to five. The fiveness of the communities and of the governors, both in Sparta and Philistia, thus reflect an institution in the common Caphtorian cradle of the two daughter nations.

15. While these notes tend to relate the language of Linear A to Semitic, it is not my intention to oversimplify a highly complex situation. The East Mediterranean was already Levantinized by Linear A times, so that the interpenetration of cultures in the area had created a considerable East Mediterranean vocabulary that crossed linguistic boundaries. Often enough, words in this vocabulary cannot yet be pinned down to any specific linguistic origin. For instance, a kind of boat appears as *br* in Ugaritic and as *byr* in Late Egyptian (UM §20.351). The occurrence of *pa-ya-re* in HT 8: b: 4 where BOAT appears at the end of the line, suggests *bayar-* (for *p*-syllables cover *b* as well in the Cretan syllabary) is the same word in Linear A. (Cf. also HT 88: 4?) The word recurs in Greek as *báris*.

16. A list of the identifications are in order before we attempt to draw conclusions.

LINEAR A WORD	OUTSIDE OCCURRENCES	SOURCE OR CLASSIFICATION
<i>a-du-si-si</i> (§9)	Canaanite	Canaanite
<i>a-pu</i> (§8)	Ug./Heb./Aram./Akk.	Semitic
<i>da-we-da</i> (§9)	Heb./Amor./Moab.	Northwest Semitic
<i>di-ka-tu</i> ^{14a}	Ug.	Caphtorian
<i>ka-pa</i> ^{14aa}	Akk.	East Semitic
<i>ka-ro-pa</i> ₃ (§5)	Ug./Akk.	Semitic?
<i>ka-sa-ru</i> ^{14b}	Ug./Heb.	East Mediterranean

^{14a} Quite possibly, *di-ka-t(u?)* (HT 52: a: 2) refers to Cretan Dicte or Dictos. I have heard about, but not yet seen, Pugliese Carratelli's article on Dicte, which is said to contain evidence from Linear A. Ugaritic *dqt* in text 51: 1: 42 may well stand for the same Cretan name, for Caphtorian *k* was intermediate between Semitic *k* and *q* and comes in now as *k* and now as *q* in Ugaritic and Hebrew (UM §5.34).

^{14aa} It is interesting to compare *ka-pa* with Akkadian *gabba* 'all' in passages like *ka-pa* MAN 62 (HT 94: b: 1) 'all the men: 62' and HT 6: a: 1, 4-5; 102: 1. Since Akkadian (i.e. Assyro-Babylonian) was an international written language of commerce and diplomacy in the Levant during the 2nd millennium B.C., the possibility of its use in Crete should be kept in mind. A 'barbaric' Akkadian, full of Northwest Semitic and other foreign words, is precisely what we find in the Tell el Amarna tablets.

^{14b} Possibly *ka-sa-ru* (HT 10: b: 3) is related to the name of the Caphtorian god of craftsmanship at Ugarit, who is called *ktr* and/or *ḫss*. The Hebrew form of *ktr* in the feminine plural is *kōšārôt* (Psalm 68: 7; see UM §20.989). Ugaritic *t* is regularly represented by *s* in Egyptian orthography.

NOTES ON MINOAN LINEAR A

LINEAR A WORD	OUTSIDE OCCURENCES	SOURCE OR CLASSIFICATION
<i>ki-re-ta-na</i> (§6)	Ug.	Caphtorian
<i>ku-pa₃-na-tu</i> (§10)	Ug./Heb.	Northwest Semitic ¹⁵
<i>ku-pa₃-nu</i> (§11)	Ug.	Northwest Semitic ¹⁵
<i>ku-ro</i> (§7)	Common Semitic	Common Semitic
<i>ku-zu</i> (§9)	Ug./Akk.	? ¹⁶
<i>pa-de</i> (§14)	Philistine	Caphtorian
<i>pe/pa</i> (§13)	Common Semitic	Common Semitic
<i>pa-ya-re</i> (§15)	Ug./L. Eg./Gk.	East Mediterranean
<i>sa</i> (§5)	Heb./Akk.	Semitic ¹⁷
<i>sa-ru/ro/ra₂</i> (§12)	Heb./Akk.	Semitic
<i>su-pu</i> (§5)	Ug./Heb.	East Mediterranean
<i>ya-ma-na</i> (§5)	Ug.	Caphtorian ?

Of these nineteen identifications, eleven are Semitic (of which one is distinctively East Semitic (i.e. Akkadian), and one is Canaanite; three others are specifically Northwest Semitic); four are Caphtorian; and three are East Mediterranean. One remains unclassified. The evidence leads us to the working hypothesis—for we cannot speak of definitive conclusions at this time—that the language of Linear A is a Semitic dialect from the shores of the East Mediterranean. Not even the East Semitic elements were unknown to Canaan. The shift of the long *ā* to *ō* in *a-du(-si-si)*, with *'adōn* from **adān*, is distinctively Canaanite (e.g., Hebrew and Phoenician), though not Ugaritic (UM §§5.16; 14.8). The East Mediterranean and Caphtorian words and names fit in perfectly with our working hypothesis.

17. The first traditions of writing in the Near East were not Semitic. Egypt, of course, has enjoyed an unrivalled linguistic continuity, from the earliest hieroglyphic texts (toward the close of the 4th millennium B.C.) to the Coptic still in use in the Church of Egyptian Christianity. The same Egyptian language has thus survived for about five thousand years without interruption. In Asia the first great literate culture was Sumerian. The Sumerians developed a pictographic system of writing into cuneiform during the first half of the 3rd millennium B.C. The Semitic Akkadians (beginning around the middle of the millennium) borrowed Sumerian cuneiform, and, after adapting it to the needs of their own Semitic language, subsequently introduced it into peripheral areas, including Anatolia and Canaan. Indo-Europeans such as the Hittites (as well as other non-Semites), who took up cuneiform, acquired it via the Semitic Akkadians. The Semites were thus literate before the Indo-Europeans in the Near East, and so a Semitic Linear A preceding an Indo-European Linear B would fit into the general historic pattern quite well. Moreover, the inadequacies of Linear A for recording a Semitic language indicate that the script was designed by an earlier people (the inventors of Cretan hieroglyphs ?) for a non-Semitic language. This, too, parallels the history of cuneiform; started by non-Semites, developed by Semites, and then spread to Indo-Europeans.

¹⁵ The root is not limited to Northwest Semitic (see UM §20.431) but, as far as our evidence goes, this particular usage is confined to Northwest Semitic.

¹⁶ Words connected with horses should always be tested for Indo-European affinities.

¹⁷ Ultimately of Egypto-Semitic derivation (§5, footnote), but this does not affect our present investigation. (Egyptian and Semitic are distantly but unmistakably related. Their common denominator is called Egypto-Semitic.)

ANTIQUITY

ADDENDA

E. Peruzzi has just published an annotated bibliography of Linear A in the journal *Minos* V, 1957, pp. 99-102. On p. 102, Peruzzi notes that Pugliese Carratelli identifies *di-ki-te* (in tablets Pc [= Palecastro] 8 and Pc 11) with Dicte (cf. our footnote 14a).

P. Meriggi's valuable discussion on 'Relations entre le Minoen B, le Minoen A, et le Chypre-Minoen' (in *Études Mycéniennes*, Paris, 1956, pp. 193-198; followed by comments of Meriggi and several other scholars on pp. 265-271) recognizes *da-we-da* as Semitic (p. 193).

a-du ('*adôn?*') 'lord?' occurs by itself in HT 86: a: 4; 133: 1; Pc 1: 2. Cf. paragraphs 9 and 16, above.

a-su-ya MAN (HT 11: a: 3-4) calls to mind the Sumero-Akkadian word for 'physician' (Sumerian *a-zu*, Akkadian *âsû*, Aramaic *âsyâ*).

mi-nu (HT 106: 1) and *mi-nu-mi* (HT 47: a: 7) should be compared with Akkadian *minû* and *minummê* 'what, whatsoever'.

The Culture Sequence of Bactria

by F. R. ALLCHIN

FOR more than a century, since the first major finds of the coins of the Bactrian Greeks were made by Masson, the imaginations of orientalists have been drawn towards Bactria. Here, it has been argued, was the homeland of a Greek community whose numismatic skill rivalled, if not excelled, that of their Mediterranean kinsmen; if their coins were so fine, then other crafts must have been equally advanced, etc. Until recently archaeology has had little to say upon Bactria. There have been tantalizing finds such as the treasure of the Oxus or the riches preserved in the Hermitage museum, but little else. Of late there have been new discoveries, including the Kunduz hoard of coins, and there has been much systematic research in neighbouring regions. Particularly since the publication of Tarn's *Greeks in Bactria and India* interest has increased and the Bactrian Greek legend has been reinforced. It appears that the time is ripe for a sober assessment of the problems, if only because it may serve to clarify the tasks awaiting archaeologists and to submit to critical attention certain aspects of the story. In attempting the work I shall rely, in the main, upon three categories of evidence: the writings of Marquart, Barthold, Chavannes, etc.; archaeological reports, particularly those from neighbouring regions of Soviet Central Asia where so much relevant work has recently been done; and the results of field observations and surface collections which I made during a visit to the Oxus valley in 1951 with Professor K. de B. Codrington.¹ This paper does not claim to be more than a summary of evidence: the detail must await the full publication of the report of our work. My argument is often tentative and must remain so at least until the publication of the many *sondages* made at Balkh by M. Schlumberger in 1949.

The problems of the region *Bactria* have become entwined with those of the city *Balkh* (? *Bactra*). It may even be that this easy verbal equation has obscured the study of the region. Certain it is that Balkh has become a catchword, a sort of archaeological Pandora's box, which the ancient texts and geographers at first glance seem to endorse. What this box may contain we do not know, but we must consider it in terms of the available evidence, including the considerable volume of excavation done at the site, even though it may be disappointing. We must also consider Bactria in the context of the large scale and systematic research done in Soviet Central Asia and the more meagre evidence from the region itself which I have used to produce an incomplete outline for the pottery sequence of northern Afghanistan. From a survey of the objects to hand it will be seen to emerge that Balkh has already produced a fairly coherent account of itself and that the materials so far discovered may be taken as a fair sample. In the wider context Balkh appears as a regional capital, strictly comparable to Nisa, Merv or Samarkand, and as one of many cities of Bactria itself to be compared to the vast remains of Khulm or Kunduz.

¹ I have not included complete references as these would make the paper unnecessarily cumbersome. In particular, I have excluded nearly all historical references and confined myself to noticing a few key archaeological reports. A select bibliography of recent Russian work will be found in A. L. Mongait's *Arheologiya v S.S.S.R.* (Moscow, 1955), ch. 8.

For present purposes we shall use *Balkh* when referring to the city (? Bactra), and *Bactria* for the region which was later known as *Tukhāristān*, that is, the probable extent of the Bactrian Greek kingdom to the south of the Oxus. Beyond the river lies the loosely defined region of *Transoxania* which extends to *Khorezm* in the north-west along the lower waters and delta of the Oxus; *Sogdia*, the valley of the Zarafshān river centred upon the oases of Bukhara and Samarkand; and to the north-east *Chāch* and *Ferghana*. To the west of Bactria lay *Margiana*, the environs of the oasis city of Merv and the delta of the Murghāb river. This region was generally in political union with its western neighbour, the *Parthian* homeland, and like it lay to the north of the great mountain divide. Parthia was bounded on the west by the Caspian and on the north by the Khorezmian desert. The southern frontier of Bactria was formed by the great mountain ranges which still form the boundary of Central Asia: for this region and the tortuous routes which traversed it we shall use the general name, *Hindu-kush*. In their western extension these mountains formed the boundary between Central Asia and Iran and divided Margiana and Parthia from *Ariana*, the region of Herat. Into this framework Strabo fits Bactria as bounded on the south by the Paropanisus mountains, the north and east by the Oxus, and on the west by the desert sands which separated it from Merv.

The evidence for the prehistoric cultures of Bactria is very scanty. A single flake of Mousterian type was recently discovered near Balkh, and this suggests links with sites to the north in Soviet territory.² Much more conclusive evidence will be available when the report upon Coon's recent excavation of a cave near Haibak, south-east of Balkh, is published. Here a sequence of four successive stone industries with associated fauna is reported. The earliest may be described as of Mousterian type, it is succeeded by a blade industry which in turn is followed by a second flake industry, again perhaps with Mousterian affinities. The final industry is described as Mesolithic and is succeeded by recent pottery, etc.³ From this preliminary report it appears that Bactria may have had a sequence not greatly different from that reported in Khorezm, etc. Here Mousterian industries seem to have given way to a final stone age culture with pottery and a blade industry. Although this latter might be described, typologically, as 'mesolithic' the Soviet archaeologists refer to it as neolithic. In Khorezm this neolithic is followed by a bronze age with clear associations with the widespread Andronovo culture of Kazakhstan and the Srubnai culture. These bronze age cultures may be associated in time with Anau III but culturally there are important differences, for they are those of pastoral nomads as opposed to the settled agriculturalists of Anau and Iran.

Recently M. Ghirshman has expressed the expectation that cultures of the Anau type may await discovery in Bactria.⁴ But so far archaeology offers no evidence to support this. Indeed, we may postulate an intrusion of *either* the northern pastoral or Iranian agricultural pattern into the region. The latter is known to have crossed the Kopet mountains into the Anau region and also to have reached the Merv oasis. There is no reason why it should not have reached Bactria, but this might also be said of Khorezm where systematic exploration has not revealed it. There, however, the northern pattern was in evidence, and there is equally no reason why it should not have penetrated into Bactria. In this situation we must record the negative evidence, that none of the explorations or excavations so far carried out in Bactria or on the north bank of the Oxus have revealed settlements of the Anau type, nor have the less easily discovered sites of the northern bronze age cultures been

² *P.P.S.*, 1953, p. 227.

³ C. Coon, 'Excavation of the Kara Kamar Rock Shelter', *Afghanistan* (1955), 1.

⁴ R. Ghirshman, *Iran* (London, 1954), p. 44.

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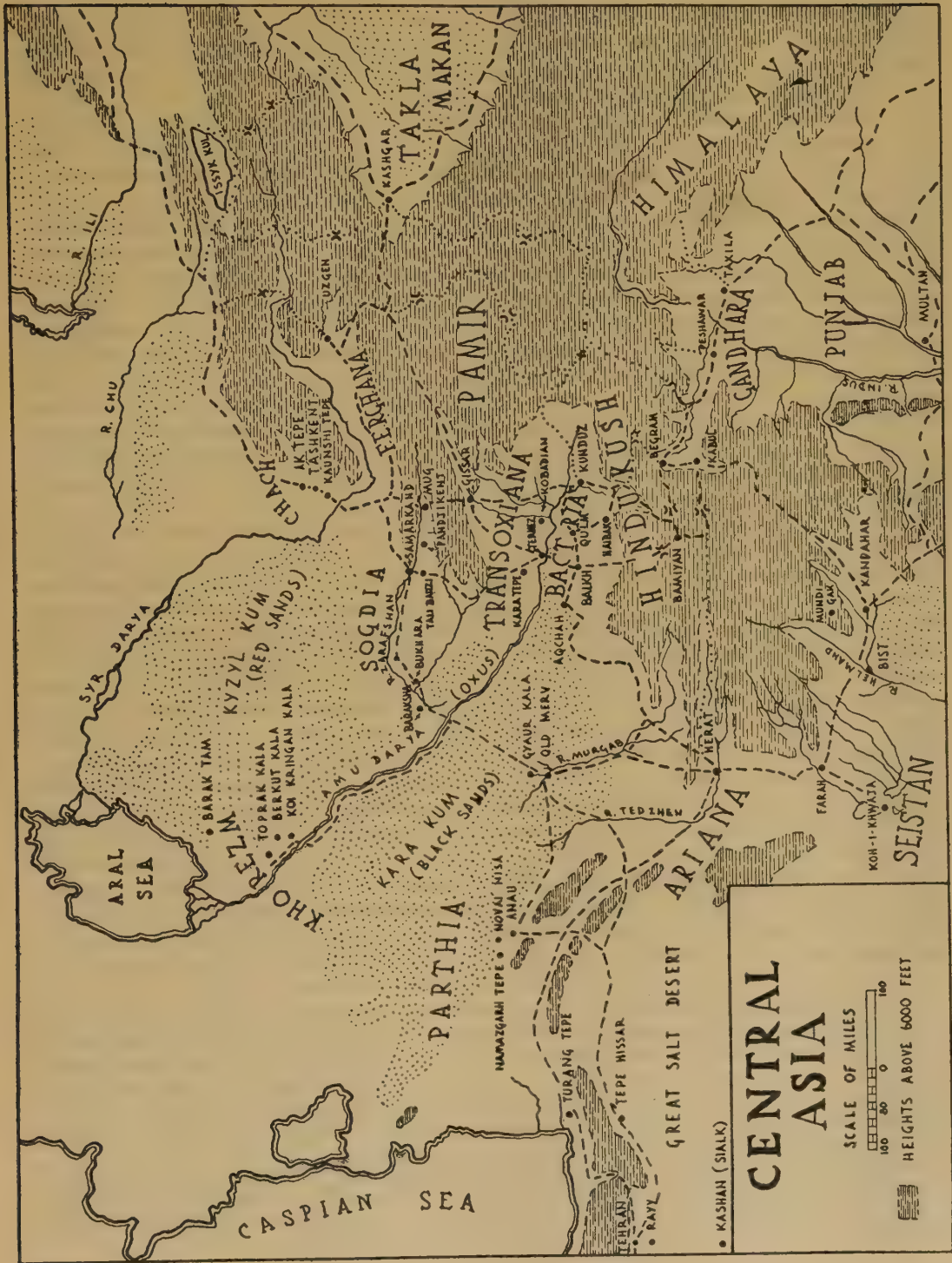


FIG. 1

recorded. We must, thus, leave unnoticed speculations which seek to connect Bactria with the Aryan speaking tribes who entered India. If, as some have supposed, they reached India from Central Asia then they must have done so *via* Ariana and the low level southern routes rather than the high passes of the Hindu-kush.

The spread of iron working into the regions east of the Caspian is generally agreed by the Soviet writers to date from about the second quarter of the 1st millennium B.C. With iron came a profound change in the nature of society which is reflected in the new pattern of settlement.⁵ The sites are in most cases on the virgin soil, but they are often covered by deposits which testify to their continued occupation in later times. A close counterpart to the ceramics of the period is found in Anau IV. Elsewhere the very distinctive pottery has been found at Old Merv, at Afrāsyāb in the Samarkand oasis, and at Kobadian in the lower valley of the Kafirnigan. More important for us, certain sherds from the French excavations at Balkh are of similar ware and form. If this is so then it may indicate that the earliest settlement at Balkh dates from the 7th or 8th centuries B.C., or perhaps a little later. The pot forms suggest homely rather than professional potters. It is inferred that the culture at Kobadian persisted until the rise of the Bactrian Greek kingdom in the decades following Alexander's expeditions. There is very little evidence of the influence of Achaemenid rule, and Skrine may be right in supposing that it left little material mark upon Central Asia. However, the probability is that during the period settlements extended through Parthia, Margiana, Transoxania, Bactria and Sogdia.⁶

We shall now interpolate a brief reference to the notices of Balkh in the Persian epic, the *Shāhnāma* of Firdausī. The legends of the early history of Bactria must have been current for centuries before the poet cast them in their present form and presented them to Maḥmūd of Ghaznī (c. A.D. 1000). Some of his sources are known, but none takes us back with any certainty beyond Sasanian times, although the first stories are set in an epoch which is certainly pre-Alexander, if not pre-Achaemenid. Here historicity ends and it is impossible to date the tales of Luhrasp the founder of Balkh, or Kai Khosru, or the other figures of this part of the story. Even if the narrative reflects, however faintly, the pre-historic iron age in which the first settlement of Balkh was made, the epic describes a city far different from that early town, and it is hard to concede that it can draw upon sources formulated before Kushan times. Moreover it is likely that its association with Zoroaster played a part in building up Balkh's legendary importance. With the Avesta we are on firmer ground. Professor Henning has recently stripped the legend of Zoroaster of some of the more fantastic accretions of recent scholarship and revealed a core of fact which accords closely with traditional belief. He concludes that Zoroaster was born between 630 B.C. and 618 B.C. and flourished in the period immediately preceding the destruction of the Median state by Cyrus. He convincingly argues that he lived and died in an Eastern Iranian region which centred around Herat, Merv, Bactria, Sogdia and Hindu-kush. This

⁵ A prime factor in the history of Central Asia is the utilization of water for irrigation. One of the basic factors of the rise of city life in the area was the draining of the river deltas and the shrinkage of the rivers towards their sources as more and more water was taken up for agricultural ends. Thus appeared the balance between town and country, which in extreme cases could starve the country to feed the city, and finally bring about the abandonment of the city. This process could be accelerated when war and devastation upset the balance and irrigation systems were destroyed.

⁶ For the culture sequence of Kobadian see particularly M. M. Diakonov, 'Archaeological Researches on the Lower Course of the Kafirnigan River', *Materiali i Issledovaniya po Arheologii S.S.S.R.*, 37 (1953), p. 253 ff., and 'Formation of a Class Society in Northern Bactria', *Sovetskaya Arheologiya*, xix (1954), p. 121 ff.

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region was as yet 'untouched by urban civilization'. Its languages must have been dialects of Eastern Iranian. It was dominated by the Khorezmians who had not yet been forced northwards by Achaemenid conquests into the region to which they gave their name. This brilliant reconstruction exactly coincides with our archaeological hypothesis and leads us to conclude that the Iron Age settlements at Merv, Balkh, Afrāsyāb, etc., were in existence at the time of Zoroaster, or shortly after, and belong to the peoples to whom the Avesta was directed.⁷

With the Achaemenids Bactria first enters history. We have seen that the population spoke Iranian dialects and belonged to a cultural area which included other regions. The Avestan 'Bāxdiš, beautiful with banners', must indicate the settlement rather than the region. On the other hand the Bāxtriš of the Behistun and other inscriptions clearly indicates the region and appears in association with Sogdia, Parthia, Khorezm and Ariana. The close cultural affinity of these areas is also suggested by Herodotus in his description of their soldiers' dress and equipment. It is to be expected that with Achaemenid tax collectors and administrators more concrete imports would appear. But the paucity of evidence for Achaemenid structural and material remains from any of the Central Asian satrapies does not suggest either frequent construction or any great quantity of imports. Even if, as seems probable, military and administrative centres were constructed it is not likely that the material culture of the bulk of the settlements was much effected, and at Kobadian the excavators concluded that the changes noticed in period II were the consequence of the Greek invasions. The only solid evidence of Achaemenid influence seems to be the 'treasure of the Oxus', but so much doubt surrounds its exact find spot and date of deposition that it must be treated with great caution. If, as Dalton concludes, it originated at Kobadian then it only emphasizes the contrast between the hoard and the material remains revealed there by recent excavation. In any case the conclusion seems just that Achaemenid rule made little material difference to the common settlements and that evidence of cultural change signifies the end of the Achaemenid period.

The invasion of Alexander and the establishment of the Bactrian Greek kingdom are historically established facts. Even so the background is confused. Thus, Rawlinson makes the *a priori* assumption that Balkh was a great fortified city and is surprised that it offered no resistance to Alexander. Tarn is also intent upon the legend and can write of 'Bactra, Mother of Cities, . . . reputedly modern Balkh' as the capital of the kingdom: but, as we shall see, this involves an anachronism no less great than that of calling Roman Londinium 'the flour of cities all'. The archaeology of all this has not advanced far, and until the French work at Balkh is published remains without real substance. The only reliable indication for the material culture of the period is that of Kobadian II. At this site the ceramics may be divided into two main groups: a grey and a red ware. The grey ware is closely comparable to that of Begram I (although as we shall see it must be somewhat earlier in time) and is characterized by a range of well-made bowls with distinctive forms. The surface was either with or without finely applied burnish and some vessels were also treated with a fine black ferruginous dressing. The red wares included characteristic goblets with well-made hollowed feet. These and many other vessels of the group were finely made, treated with a red ferruginous dressing and variously burnished. In our surface collections from Bactrian sites the grey ware occurred at Balkh, Khulm, Kunduz and two smaller sites, and included specimens with the black dressing. This black dressing appears to be that which has been described as 'truly Hellenistic,' but it is certainly not that of the Greek black gloss wares, and to my knowledge no fragments of these have

⁷ W. B. Henning, *Zoroaster Politician or Witchdoctor*, Oxford, 1951.

yet been found in Bactria. The red ware is hard to precise from surface collections as it persists for many centuries in Central Asia with only minor changes. It is, however, possible to make a broad technological division into *early*, *middle*, and *late* divisions. Of these the early relate to the present period, i.e. from the 3rd century B.C. to the beginning of the 1st century B.C. They are found at many Bactrian sites and are particularly numerous at Balkh and Kunduz. To the same period may belong the fragment with the finely moulded head, resembling a Bactrian Greek coin profile, found by Schlumberger at Balkh.⁸ It is tempting to see in this piece the influence of imported red gloss relief wares, perhaps even Arretine, which became popular in the Mediterranean during the 2nd century B.C. From the Russian reports it appears that the red ware occurs widely in Khorezm, Sogdia, Parthia, and sites of the Termez complex, but it is not easy to make precise identifications from the published material.

The period of Greek rule must have witnessed many changes. It is safe to infer that the majority of the population was still Iranian, possibly including the unsettled Śakas, and that Greek elements were confined to the ruling group. Even this group cannot have long remained Greek in any strict sense. The towns and the material culture may also have been more oriental than Greek, for this mode was encouraged by Alexander himself. It has been argued that direct contact with India was made only after Alexander had crossed the Hindu-kush: there is little evidence for it before that date. In the following centuries the evidence is clearer and the references to Vāhlikas in the *Arthasāstra* and *Mahābhārata* may be cited. Contact with the Mediterranean there must have been for there are many references in Greek and Roman literature. Thus Strabo writes of Bactria as the ornament of all Ariana and Polybius mentions its military strength. Even if Balkh was the capital it must have been one of many towns which flourished at the time. It is probable that the earliest settlement at Balkh was in the modern *shahristān* area close to the citadel. This was now augmented by an area enclosed by some sort of defensive walls, and it may even be that this area lay on the line of the great southern and eastern defences, although the evidence suggests that these are later. When the Chinese ambassador Chang Ki'en (c. 125 B.C.) visited Ferghana and Bactria he noticed their settled agricultural communities and, together with Parthia, commented upon the walled towns. But already Sogdia and Transoxania had been swamped by the nomadic Yue-chi.

The downfall of the Bactrian Greek kingdom shortly after Chang Ki'en's visit may be associated with three causes: the isolation and lack of unity of the Greek colonies in Asia, the growing might of Parthia, and the invasions of the barbarians. The history of the following decades is complex and confused, but before we turn to the archaeology we must outline certain features. We have already mentioned the problematic relationship of the Śaka tribes to the settled population. Some have supposed them to have been an aboriginal population whom the latter subdued; others that there was little ethnic difference and that both spoke Iranian dialects. According to the Chinese sources the movements of barbarians started as a result of the warfare of the great nomadic tribes of the Yue-chi and Hiung-nu, resident when first we meet them in the region of Kansu. Early in the 2nd century B.C. the former were defeated and driven through Ferghana into Sogdia and Transoxania. The pressure of this movement, from the north-east, in turn drove the Śaka tribes westwards until they were checked upon the frontiers of Parthia, when, perhaps, by some mutual treaty, they were deflected southwards and moved across the hills into Ariana. From here the road lay open and they moved southwards into the then rich lands to which they gave their name (Śeistān, Śakasthāna), where they established a kingdom

⁸ 'Le prospection archéologique de Bactres', *Syria*, xxvi (1949).

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with Parthian support. Thence moving eastwards across the Farah river they were in a position to invade India. Meanwhile Bactria submitted to the Yue-chi hoard, who are probably the Tochari of Western writers (Sanskrit, Tukhāra). They have been sometimes supposed to have been a branch of the Turkish tribes, while the Hiung-nu have been seen as Mongols, the forerunners of the Hūnas and Chionites. It was a section of the Tocharians who later followed the Greeks across the Hindu-kush and created the great Kushan empire in North India.⁹

With the time of these invasions may be associated the deposit of the great hoard of Greek coins found recently at Kunduz. The material culture, as revealed at Kobadian (III), springs directly from that of the previous period and it is not easy to differentiate the surface collections. The pottery wares and forms may be compared to those of Begram I with which they are probably contemporary.¹⁰ The meagre evidence suggests a time of poverty but this may well be illusory, and it is certainly to be contrasted with the might of the Parthians to the west. Greek and Roman imports were crossing Iran in the 1st centuries B.C. and A.D. and have been found at Nisā. They probably also reached Bactria, for stone columns and capitals have been found at both Balkh and Kunduz of Roman orders identical to those of Parthian Nisā and Taxila (Sirkap). They may also be compared with those of the recently discovered temple near Baghlān and perhaps also with those of the palace of Kūh-i-khwaja in Seistan. The precise date of all these structures is hard to fix, but all may belong to this period, although it must be admitted that these very orders formed an element of the 'Gandhara' style and persisted for centuries in northern India and Central Asia. The discovery of porticoed gateways at both Balkh and Nisā suggests strong common influences in Parthia and Bactria. It was at this time that Diodorus Siculus wrote of the great defences of Balkh and Quintus Curtius praised the fertility of the province. It was probably now that the mighty southern defences were constructed and the extensive suburbs between them and the city developed. Thus the Tocharians must have quickly settled and assimilated the culture of the existing population, just as the Kushans later assimilated so much of Indian culture.

By the close of the 1st century A.D. the extension of the Kushan rule to the south of the Hindu-kush produced an unprecedented political power which straddled the mountains and set the pattern for centuries to come. In Bactria, Khorezm and Sogdia, no less than in Peshawar or Mathura it was a time of intense building activity, and the great fortress cities of Toprak kala, Taxila (Sirsukh), or Shahr-i-Banu north of Khulm, are single examples of a pattern which was repeated many times. The material remains of Kobadian IV may be taken as indicators for Bactria. The grey ware disappears and the red enters its *middle* division. There is a noticeable coarsening of potting techniques. The footed goblets are less carefully finished. The fine burnish also disappears. The pottery of Begram II exactly reflects that of Bactria. Balkh must have been a regional capital of the Kushans and received the title she held for many centuries of *Bāhl* or *Bāxtrā* of the Kushans.¹¹ Mediterranean imports continued to arrive, as is witnessed by the treasure buried at Begram with its 1st and 2nd century Alexandrian pieces. Probably both the

⁹ My reading of this vexed question and of the tangled history of the period mainly follows Codrington's 'Geographical Introduction to the History of Central Asia', *J.R.G.S.*, CIV (1944). In any new study of the problems it will be necessary to take into account recent Soviet work, particularly, S. P. Tolstov's *Drevnii Khorezm* (Moscow, 1948) and A. N. Bernshtam's 'Historico-archaeological studies in Central T'ien-shan and Pamir-Alay', *M.I.A.S.*, 26 (1952).

¹⁰ R. Ghirshman, *Begram* (1946).

¹¹ J. Marquart, *Ērānsāhr*, p. 88.

land route across Iran and the sea route *via* Barbaricon, attested by the Periplus, played a part. Cultural links between India and Central Asia were at their strongest. Not again until Moghul times were they to be so close. It may be held that the political and economic power of the Kushans provided a means for the Indian merchants and missionaries who settled in the Khotan and along the southern routes of the Takla Makan with their Indian *prākṛit* dialect and script. But this whole problem needs more research. Thus the 2nd century saw the culmination of the early civilization of Bactria. Not only did it leave its traces in structural remains but also in the vast irrigation networks required to support the growing population. Recent work in Khorezm and Ferghana has shown how these systems developed. In the Oxus delta they can be traced back to the small beginnings in the prehistoric period (the Kangui complex) and through it to the lengthy canals and extensive field networks of the Kushan period. Anyone who has travelled in the southern plain of the Oxus will know that a rich field awaits the investigator there also.

The 3rd and 4th centuries saw a gradual decline in the wealth and prosperity of the settlements. A series of dynasties ruled who continued to call themselves Kushan, and who were in all probability their descendants. The material culture would appear to be characterized by the levels Kobadian V and Begram III. At Kobadian the pottery is distinguished by a general heaviness and by a profusion of stamped ornament (a form of decoration which was in evidence already in the Bactrian Greek period at the site). The red wares enter their *late* division and although the potting at such centres as Balkh probably maintained much of the earlier quality at other sites it may be inferred, from our surface collections, to have been markedly inferior. The history is obscure, and the numismatics, which have supported the earlier periods, are unhelpful. Herzfeld, in his study of the *Kushano-Sassanian Coins*, suggested that the key to reading the difficult inscriptions lay in recognizing that those of Balkh used a script derived from the Greek, whilst those of Merv, from which doubtless the former series were copied, used a Pahlavi or Persik script with its roots in Aramaic. Once again the cultural boundary between Merv and Bactria is emphasized, and thus while the late Kushan Bactria may have been a tributary of the Sasanians it was never fully absorbed by them, at least not until their last years. The conjectured invasions of the Chionites (? Hiung-nu) carries forward the earlier pattern. Evidence of the material culture must await further research. The pottery appears to have been hand made, but no monuments of the period have yet been isolated in Bactria. Ghirshman suggested that Balkh was the capital of the Hephthalites, the northern branch of the Chionites, while the southern branch crossed the Hindu-kush and established themselves in Kabul and Zabul.¹² On the other hand the Chinese sources suggest that the Hephthalites were the descendants of the Kushans and thus they may have been unrelated to the Chionites. The southern Chionites must have been the Hūnas whose raids on India were long remembered, and who lend support to the Chinese pilgrims' accounts of their persecution of the Buddhists. Even if the Hephthalites were not so savage there is no reason to regard them as patrons of the religion. It is impossible to determine the elements in the population at this time, but if the Chionites were indeed of Mongol stock they may have contributed to the strongly Mongol features of the Hazāras of Northern Afghanistan. It is certain that the population of Bactria must have contained many different elements, and with each new wave of invaders the complexity must have grown. For whatever reason, site after site seems to have fallen into decay and this has been noticed by the Soviet archaeologists as evidence of the breakdown of the old social order and the birth pangs of the feudal society.

¹² R. Ghirshman, *Les Chionites-Hephthalites* (Paris, 1948).

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If this is so then the wealth and construction of the 6th to 8th centuries amply bear out the vitality of the new order. They are associated with the rise to power and western movement of the western branch of the Turks, although these were not necessarily responsible for the economic changes which occurred. In Khorezm, Sogdia and Transoxiana large numbers of structural remains have been reported, and our survey in 1951 revealed many comparable sites in Bactria and the valleys of the Hindu-kush. The pottery at these sites shows a dual relationship, on the one hand to the sophisticated wares of Pandjikent and Sogdia, and on the other to the hand-made wares of Ferghana and T'ien Shan. Structural peculiarities also occur in all the regions of Central Asia. There are indications that in Bactria as elsewhere many sites were occupied for only short periods of time and thus form ideal targets for small-scale archaeological study. The overthrow of the Hephthalites and the wars of the Turks and Sasanians cannot concern us here. After 565 the Turks held sway from the frontiers of China to Iran, and for several decades their power also extended to the banks of the Indus. Of their monuments surviving in northern Afghanistan the great fortress of Shahr-i-Zohak and the nearby caves of Bamiyan are the most remarkable. Although they were not Buddhists the Turks patronized the religion and hence with them may be associated the many Buddhist caves which line the route from India to China. The fresco paintings which adorn their walls are remarkable examples of the synthesis of Chinese, Persian and Indian influences. In addition to the caves there were also many other religious structures which were adorned with frescos and with stucco reliefs. We may cite the monasteries at Kunduz and Fandūkistān, and the non-Buddhist temple at Pandjikent. The systematic exploration of such sites is likely to produce important results at little cost. Equally worthy of discovery would be the new monastery (*nau bahāra*) at Balkh whose paintings excited the imaginations of the early Arab writers.

We have taken our story to the threshold of the Arab conquests and have made no mention of the Sasanian empire. Many writers have written of Sasanian influence in the Oxus valley but there is still very little supporting evidence, beyond the fact that the coinage of the Kushan, Hephthalite and Turkish rulers was copied from the current Sasanian. It must be admitted that the archaeologist is hampered by the almost complete absence of work done at Sasanian sites in Iran, and thus comparisons of material culture become hazardous. Even the architecture is problematic: for example the squinched dome appears throughout Central Asia, including Bactria and the Hindu-kush, not much before the 7th century, but in Iran it has long been regarded as centuries older, admittedly upon somewhat tenuous evidence. The historians have not shared this vagueness and both Marquart and Minorski emphasize that 'only for a short time were the Sasanians masters of Balkh'. This was at the very end of their rule. We are again reminded of the dividing line between Balkh and Merv. The Bactrian region was long ruled by newly settled Central Asian conquerors and was quick to absorb and translate to its own ends the culture of its Iranian neighbour.

The century following the downfall of the Hephthalites was one of almost unbroken fighting. It culminated, for Bactria, in the eclipse of the Sasanians under Arab attacks in 651 and the defeat of the Turks by the Chinese seven years later. The former event entirely changed the history of Central Asia, and by the beginning of the 8th century Arab rule was firmly established in Bactria and was not again to be challenged. The subsequent history is well known. First there was a period of rule by Umayyad and Abbāsid governors, during which the local rulers one by one succumbed to the new religion. In the 9th century the Tāhirid and Sāmānid dynasties emerged and the centre of power again shifts to Turkestan. The pattern of the next years is one of struggle for power between Turkish and Iranian factions, culminating in the rule of the Seljuk Turks. We arrive thus at the

opening decades of the 13th century and the devastation which followed the Mongol invasions.

There is no lack of materials to clothe these dry bones of history with flesh. During the period a great volume of literature was written in or dealing with Central Asia. Under the Sāmānids there was a golden age of Islamic scholarship. This was the time when Samarkand and Bukhara were described in extravagant terms : Bukhara as the ' home of glory ' was the seat of a magnificent library whose equal Mansūr had never seen. There was another in Merv. Balkh was no less favoured and earned the title which has bewitched the philhellenic archaeologists and historians.¹³ In both Persian and Arabic there have survived works by great geographers and historians. Above all was Bīrūnī the encyclopedist and perhaps the greatest of Muslim scholars. The monumental and material remains of these centuries must have been equally striking, and in Soviet Central Asia much has been studied and published, although the publication has so far done them small justice. In Bactria little has survived the Mongols, but here and in the Hindu-kush sites and monuments exist at which a sequence could be easily obtained. From our own researches it is possible to point to monuments of almost every century, many hitherto unrecorded. Likewise a pottery sequence, although based entirely upon surface collection, begins to emerge. The 8th to 9th centuries saw the continuation of local potting of distinctly pre-Muslim type, including hand-made wares, often painted. These wares can be followed through into the 12th century. It is not certain whether there were as yet any imported glazes in the region although odd pieces did apparently reach Pandjikent. It is also possible that local monochrome glazes date from this period. The 9th to 10th centuries saw the manufacture of lead glazes akin to the famous Afrāsyāb wares, and these compare with the Ghaznavid wares of southern Afghanistan. Finally, in the 11th and 12th centuries there seems to have been an introduction of *sgraffiato* and typical ' Seljuk ' wares, as well as an importation of Rayy and Kashan lustres. Even among the local painted wares certain styles can be recognized which extended from Ferghana to Bactria and Baluchistan, but the whole sequence needs to be precisised.

The Mongol invasions bring to an end this early Islamic epoch in Central Asia. It is not easy to estimate the magnitude of their effects. Many cities were razed to the ground, some never to be rebuilt. Both Barthold and Tolstov have drawn attention to the long, delicate history of irrigation in the area. Once this highly artificial, man-made, system was destroyed a chain of reactions followed which turned the ancient oases to desert. Turkestan never recovered from the effects of this devastation and the resulting poverty and lawlessness lasted up to this century.

We have examined the contents of our Pandora's box. We have seen that at almost every stage archaeology can be invoked to enrich the history. We have also seen how many and varied are the problems which await solution. Bactria is a country with many abandoned sites, often inhabited for only short periods. It is therefore peculiarly suited to small-scale survey and collection: problems can often be answered without spade striking soil. It provides a challenge to scientific archaeology, for its secrets may be obtained with the utmost economy. The way forward lies in carefully planned

¹³ ' Mother of cities ', or as Barthold dryly, but correctly, has it ' Mother of towns ', translates the Arabic *umm-al-bilad*. The title is reminiscent of the almost synonymous Quranic *umm-al-qurah* which was applied to Mekka, and need imply no more than that the city was an administrative capital. The conceit of a 10th century geographer applying it to Balkh may be compared with the honorific ' *Ka'aba* of sovereignty ' for Bukhara. Incidentally, the Muslims were impressed by the antiquity of Bukhara, for they coined the phrase ' Old as Bukhara '.

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research, working back from the known to the unknown, framing and testing hypotheses, relying as far as possible upon surface observation and small-scale excavation designed to answer specific questions, rather than large-scale excavation at single sites. It is to be hoped that the time may not be far distant when the Government of Afghanistan will recognize the tremendous interest of its ancient sites and institute its own programme of research. Sensibly planned the work need not be costly: the results can be very great. If the work is to succeed it will do so best when local interest supports local workers.

Braves, Beakers and Battle-Axes

by H. W. M. HODGES

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WHILE reading an account of the archaeology of the Plains Indians in a recently published general account of North American prehistory,¹ I had the feeling that the ground was somehow familiar; but it was not until searching through Catlin's *North American Indians*² that the reason for this feeling became clear. Briefly, I intend to discuss the machinery by which the Plains Indian society evolved, and the bearing this could have on the interpretation of the prehistory of temperate Europe in the period of transition from Neolithic to Bronze Ages.

Until the 16th century, the Plains Indians seem to have been predominantly agriculturists, living in villages of pit houses, and cultivating maize, beans and squashes, although doubtless they hunted game besides. The change to a way of life based almost entirely on the hunting of bison seems to have been the outcome of two major factors—a dramatic increase in the size of the bison herds, and the acquisition of feral horses that had escaped from the Spanish colonies of the South. Here it should be pointed out that the change was not one dictated by an altered environment, but adopted as a preferred way of life. Although some tribes, in fact, continued to practise haphazard cultivation in between bouts of hunting, the 'classical' culture of the Plains Indians was a direct outcome of the change to nomadism. As the bison were always on the move, so were their predators; pit houses were replaced by tepees, and some tribes that had once made passable pottery gave up its manufacture altogether.

This altered way of life was not confined to the original Plains Indians alone. Other tribes from peripheral regions, themselves initially agriculturalists, moved into the area and adopted, not only the way of life of the Plains Indians, but also their ceremonies and religious practices. The outcome was a tolerably uniform cultural entity, which may be defined on the material side by the use of the tepee, the bow and arrow, the feathered head-dress, and so on; and on the social side by the elaborate military systems, the taking of scalps, the counting of 'coups', and the general acceptance of inter-tribal warfare as a natural state of affairs.

There were, naturally enough, differences in the equipment of the various tribes; but the uniformity is more surprising, especially when it is realized that there was no common tongue. Nor was there, in the 19th century, any sign that such a tongue would have developed had the Plains not been overrun by Europeans. Instead there had grown up a complicated system of sign-language for use between the tribes.

In the period of transition between Neolithic and Bronze Ages in temperate Europe, two cultural 'complexes' are apt to cause the prehistorian profound discomfort. These are generally euphemistically referred to as the Bell Beaker folk and the Battle-Axe people. Both groups are known almost entirely from their burials, and from this it is normally inferred that one is dealing with the remains of nomadic, or at least very mobile, peoples.

¹ F. C. Hibben, *Treasure in the Dust*, London, 1953, 175 ff.

² G. Catlin, *Letters and Notes on the Manners, Customs and Condition of the North American Indians*, London, 1841.

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In both groups the graves share many features in common; as a concept they are identical. In both cases the body was buried in the contracted position in a shaft, frequently timber lined. Placed with the body were a drinking vessel, ornaments and, in the case of males, weapons. Such graves are generally found in groups or cemeteries and sometimes had barrows raised over them.

The distinction between Bell Beaker and Battle-Axes graves lies in the difference between the types of drinking vessels on the one hand, and the quite distinct nature of the weapons on the other³. But to emphasize these differences would be to conceal the more fundamental singleness of ideas behind these graves and, as I hope to show, they need not be indicative of widely diverse origins.

Simply as a matter of convenience, I shall from now on refer to both 'complexes' under the blunderbuss title of Single Grave peoples.

If historical parallels are dangerous, archaeological ones must be doubly so. I do not intend, therefore, to make a wholesale comparison between these peoples differing so widely in space and time, but rather to examine possible correctives to one's way of looking at the Single Grave peoples. Justification for making this comparison lies primarily in the fact that in either instance one is dealing with people who were nomadic. In the case of the Single Grave peoples this can be inferred, not only from the lack of habitation sites, but also from their very wide diffusion; and although, in the case of the Bell Beaker folk, an interest in the trading of amber, gold, bronze and other precious materials has been suggested to account for this phenomenon, trade alone does not seem adequate, in this stage of development, to have supported the size of population implied by the number of burials.

There is, of course, no question of conjuring up gigantic herds of European bison. Even so, if as the evidence suggests these people were nomadic, they had to live on something, and one is reduced at once to conjecture as to what that something might have been. As a working hypothesis one may suggest herds of domesticated cattle as the mainstay of their economy, although sheep or goats are other possibilities.

Both the Pawnee and Cheyenne Indians grew crops as well as hunting. The fields were planted and left standing, the crops being gathered only after the return from the season's hunting. It is known from the grain impressions in their pottery that corn was also grown by the Single Grave peoples; and the emphasis on barley, which is a far tougher plant than wheat, might, but does not of necessity, result from a similar practice. It is more important to notice that the growing of crops and a nomadic existence are not incompatible.

This change of basic economy in prehistoric Europe has often been attributed to various causes as, for example, the podsolization of heathlands resulting from man's agricultural activities. On the other hand, this change is not of itself evidence of economic compulsion. The Plains Indians had, as far as one can discern, no compelling economic reason to take to hunting bison, although there were many stimuli, not the least of which were so many free meals on the hoof. In the study of causes one must, I believe, give far more weight to mankind's freedom of choice than is normally done. Thus, there seems to me nothing irrational in supposing that the Plains Indians took to hunting simply because they preferred that way of life.

Both the Plains Indians and the Single Grave peoples were also in the singular position of being on the fringe of a developing and expanding higher civilization, the European settlements of the New World in one case, and the city states of the Mediterranean in the other. In both cases the barriers that made contact difficult were those of distance rather

³ V. G. Childe, *Prehistoric Migrations in Europe*, Oslo, 1950, 106 ff.

than impassable country. Hence, for a long period the only contact the Plains Indians had with their white neighbours was through the traders and trappers who penetrated into their territory. Such men, it must be remembered, were not a representative sample of their civilization.⁴ So far as both equipment and mentality go, the voyageur of Canada stood nearer to the American Indian than to the courtier at Versailles. Furthermore, they were there only for the purpose of procuring fur and hides by barter, and the goods they offered in exchange were those that they believed the Indians wanted; chiefly steel knives

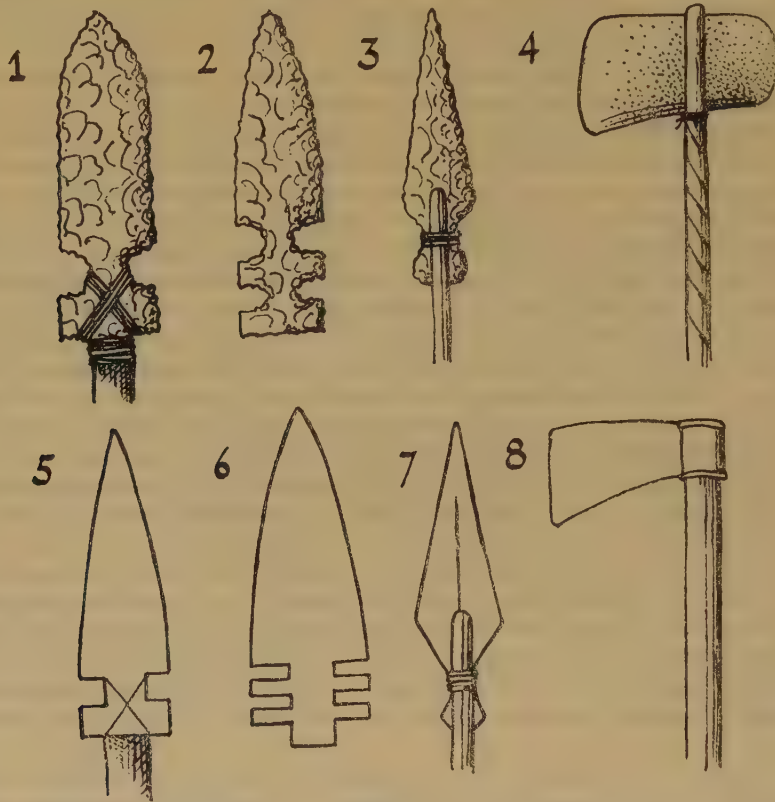


FIG. 1. NOS. 1 - 4, STONE TOOLS MADE BY THE PLAINS INDIANS; NOS. 5 - 8, STEEL ONES COPYING THEM.

and tomahawks, the latter made especially for this market. In fact, in the stone and steel equipment of the Plains Indians one can see two factors determining the shape of their tools. In the tomahawks supplied by the traders there was a deliberate attempt to copy the blade form of the native throwing axe of stone. On the other hand, kitchen knives of Sheffield steel were often adapted by the Indians to the shape of their own flint tools (FIG. 1).

By the end of the Neolithic period traders from the Mediterranean world were demonstrably working their way into Central Europe, and it seems a reasonable assumption that mentally they were of the same calibre as their New World counterparts. As such one must expect to find their influence conditioned not only by their own material short-

⁴ R. A. Billington, *The Frontiersman*, Oxford, 1956.

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comings, but also by their selection of what should be passed on to the natives. Thus, if the flat tanged knives found with the bell beakers have no exact Mediterranean parallels one should not be surprised, but grateful rather that there is an even passing similarity. The argument is even more relevant to the battle-axes, and should warn one against taking too mechanical view of their development. The process of translating stone and antler prototypes into metal, and these back again into stone, is not of itself very remarkable, and in principle could be repeated *ad nauseam*. The drooping blade of some stone battle-axes is often taken as evidence of copying from metal prototypes. A good case could be made to support the view that this is a common feature of throwing axes. Compare the tomahawk and francisca. The view that the battle-axe alone has any racial, or even cultural, significance is no more realistic than to suggest racial or cultural affinities between the Plains Indians and their white neighbours on the evidence of the use of the steel kitchen knife.

Battle-axes automatically bring one to the question of the Indo-Europeans and their speech. Little need be said on this subject save to point out that even a tolerably uniform material culture is not of itself evidence of a common tongue; and probably this is demonstrated nowhere more clearly than by the Plains Indians. This is not to deny that the Single Grave peoples *could* have had a common language; it is simply not a question that archaeology can properly be asked to answer.

If the problem of language is unanswerable, that of a 'cultural cradle' is nonsense. If the Plains Indians had such a 'cradle' at all it was in the roaming herds of bison; and by the same token, if the Single Grave peoples had a 'cradle' it must be sought, not in this or that particular Neolithic group, but in their way of life. Hence, the origins of the Battle-Axe peoples do not, I believe, present one with any real problem. Admittedly, the battle-axe itself could be a borrowing from the Mediterranean world, as too could be the idea of single burial with drinking vessels and weapons, which have a debatable starting point in the Alaja tombs of Anatolia.⁵ But these aspects are not fundamentally significant; it is more important to notice that in the later Neolithic period, virtually all over temperate Europe, there was a tendency towards a greater mobility than in the early phases, a tendency that could have led to nomadism.

The origins of the Bell Beaker peoples do, however, present a problem. Before discussing this it is important to realize that the process, known by anthropologists as acculturation, can be so rapid and so complete as to obscure a peoples' origins where only the archaeological record survives. Thus, amongst the Cheyenne Indians of the 17th century one would have found no trace of the tepee, the 'chief sticks' or the Sun Dance; all were acquired from other tribes, and yet the decoration of the Cheyenne tepee and 'chief sticks', and their version of the Sun Dance, were not identical to those of their neighbours and could have been distinguished as 'typically' Cheyenne.

Throughout this discussion I have assumed that the burial habits and way of life of the Single Grave peoples were developed in temperate Europe; and unless one allows dual origins, which on the face of it seems unlikely, it follows that the Bell Beaker 'complex' must have been developed within this area. In fact, I believe one need not look beyond the farming communities of the late Neolithic in the Danube Valley, for it is exactly amongst these agriculturalists, sandwiched between the outposts of the civilized world in the Balkans and the territory of the Battle-Axe peoples, that a sudden, if not violent change is most likely to have taken place. Furthermore, if much of the equipment of the Bell Beaker peoples—copper daggers, V-perforated buttons, stone arrow-straighteners and wrist-guards—appears to have been derived from the Copper Age communities of Hungary

⁵ Seton Lloyd, *Early Anatolia*, London, 1956, 96 ff.

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and the Balkans, while their way of life and their burial customs seem to be borrowings from their Battle-Axe neighbours, one need not be surprised, for a similar phenomenon has already been noted amongst the American Indians under very similar conditions.

As for the bell beakers, as long ago as 1929 Professor Childe⁶ pointed out that both in form and decoration vessels very like the bell beakers were being made by the Neolithic peoples of Bohemia. The only real distinction between these two groups of pottery lies in the technique of manufacture, the finer fabric and burnished slip of the bell beakers. Such improvements could easily result from a deliberate attempt to reproduce the more sophisticated wares of South-East Europe, but such an origin is not demonstrable as long as it is insisted that the bell beaker must be the end-product of a tidy typological sequence. In my opinion, it is this insistence on providing the vessel with a decent ancestry that has done more than anything else to cloud the picture. Bearing in mind that it is in all probability an object created especially for a ritual, like the 'chief sticks' of the Cheyenne, it seems only right to suppose such care would have been lavished on its making.

⁶ V. G. Childe, *The Danube in Prehistory*, Oxford, 1929, 194 ff.

The Longstone, Mottistone

by JACQUETTA HAWKES

THE Longstone has the distinction of being the only megalithic monument in the Isle of Wight. The conspicuous features, and those which for many centuries attracted attention to it as an antiquity, consist of a massive monolith standing about 13 ft. above the ground (PLATE 1), with a second, smaller block lying recumbent against its foot. Formerly this recumbent block was further to the south; some time after 1856 Lord Dillon had it turned over to discover whether there was a mortice hole on the underside; there was not, and it was left lying in its present position at the foot of the great upright, where the guide leading parties from the local holiday camp can convincingly describe it as an altar or slaughter stone.

The monument stands on the gently marked summit of the lower greensand ridge that here runs along near the southern foot of the chalk downs. A footpath dropping down the steep slope from the Longstone to the village of Mottistone, half a mile to the south, cuts through a band of ferruginous sandstone within the greensand only a hundred yards below the monument. Doubtless this is where the stones were obtained, although they are harder than any of the somewhat crumbly masses that can be seen *in situ*. Open meadows lie to the north, but unhappily the site itself falls just within a Forestry Commission plantation (O.S. Nat. Grid 40/408843. 420 a.s.l.).

Place-name authorities agree that the village took its name from the stone; they derive it from *motere stan*, the speaker's or pleader's stone.

There seems no doubt at all that the present arrangement of the megaliths at the Longstone is artificial. Had they occurred further down on the slope of the ridge it would be possible for natural slipping to have raised the standing stone; but situated as they are on the summit, it is certain that the great monolith can only have been erected by the hand of man. What has been regarded as doubtful is whether the mound adjoining the stones is a long barrow, a natural ridge, or a sand digger's spoil heap. The mound is 70 ft. or more long and runs east and west, with the eastern end sloping gently down to the stones. This eastern end is strongly marked and continues so for some 30 ft.; the western part, on the other hand, becomes ill-defined and finally dwindles imperceptibly into the ordinary ground level. A slight hollow along the south-east side widens into a bite into the mound about halfway along; our excavation suggests that both were the result of sand quarrying which has removed part of this southern side of the mound.

Although the ridge west of the Longstone had been noticed by local antiquaries, it was first fully recognized and claimed as a long barrow by O. G. S. Crawford, who examined it in 1920 when it still lay on an open heath. He visited the site on 8 August, 1920, long before the conifers were planted, when he was excavating the Rancombe barrow, and recorded his observations on the margin of his map (Hants 94 S.W.), but as he did not publish them it seems worth while doing so here. He wrote: 'The Longstone consists of *two* megaliths, one upright and one fallen, of greensand rock, situated at the east end of a long low mound, evidently the remains of a long barrow. There are many hollow tracks passing close by and over it, so that the shape of the barrow is much defaced. On the south west, outside the limits of the barrow itself, is a small semicircular bank, like a tiny amphitheatre, perhaps connected with the Moot? The barrow is oriented slightly

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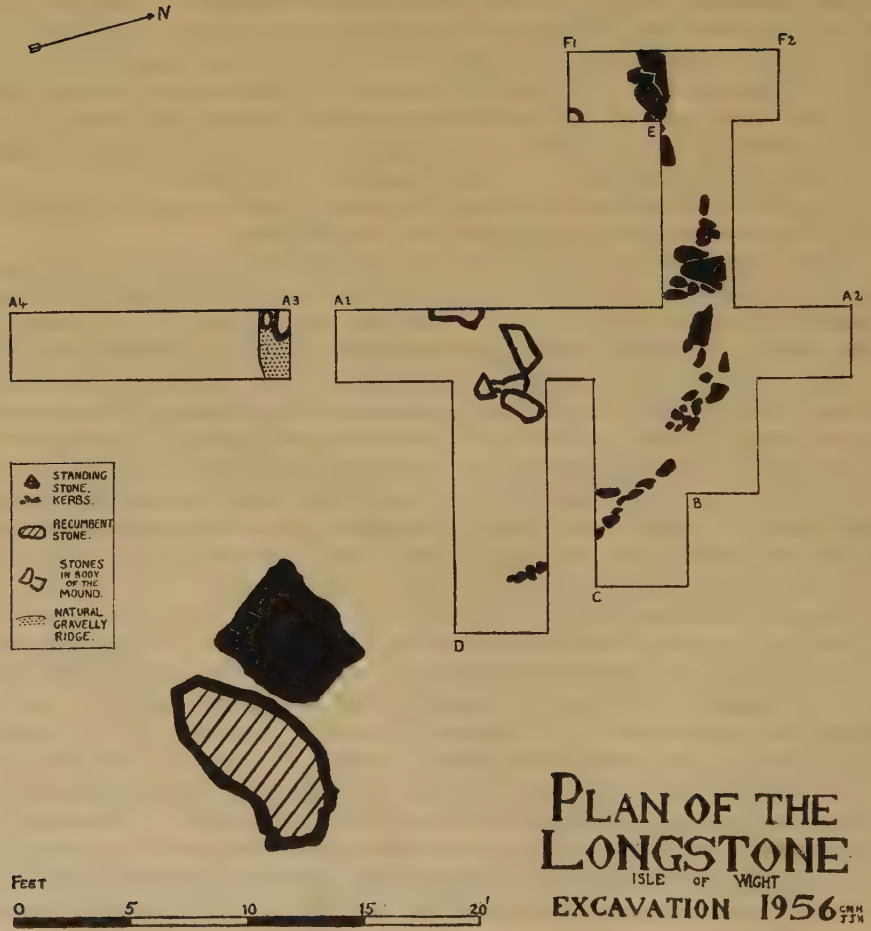


FIG. 1

THE LONGSTONE, MOTTISTONE

south of east. The ditch on the north side should be worth excavating; that side is less mutilated than the south side. The mound is about 30 paces long.' Mr Crawford's paces were about $2\frac{1}{2}$ ft. in length. He published it as a megalithic long barrow in the gazetteer of the O.S. map of *Neolithic Wessex*. Later, however, Mr G. C. Dunning gave it as his opinion that the mound was a natural one and his scepticism was shared by Dr Glyn Daniel. Mr Grinsell, though uncertain, was inclined to share Mr Crawford's unwavering faith in the authenticity of his long barrow.

The small test excavation described in this note was undertaken to try to settle this controversy. There was another, more practical reason for it, in that the Forestry Commission had undertaken to clear the trees on the mound if asked to do so; it seemed unwarranted to give the order without first proving that it was indeed a barrow. The owner of the land, Lord Mottistone the architect, was most anxious for the dig to take place.

It was carried out in September of 1956, most of the work being done by Mr C. N. Hawkes, Mr Jack Jones, Curator of the Carisbrooke Museum, and Mr Frank Hayles of the Lodge, Brook Hill. Nicolas Hawkes also helped me with the preparation of the plan and sections. The site proved to have practically every disadvantage known to archaeology except mud. The mound was in the grip of living pine trees and dead stumps, while the roots of the dense covering of bracken and brambles had penetrated deeply; it was composed of extremely shifting sandy soil and soon proved to be both riddled and undermined by rabbit burrows.

The first cut was made through the north flank from the eastern summit of the mound, the trench (A1—2) being sited as nearly as possible at right angles to the rather uneven spine. It at once proved the mound to be artificial, for the old ground surface of clean and sometimes marbled sand could be easily recognized below the dark, loam-mixed sand of the mound itself. Slabs of ferruginous sandstone were found near the south end of the trench, but they appeared to be lying slightly above ground level and to have no significant relationship to one another. Unfortunately, the rabbits had a special preference for burrowing below all the larger stones in the mound, making it impossible to establish their original relation with ground level. Another block, standing obliquely, half on edge towards the north end of the trench, was immediately suggestive of a kerb. The cut B was then made and, when it seemed to confirm the reality of the kerb, was broadened and extended to C. A second eastward cut was made to D. It will be seen that the kerb curves round through B and C, but dies out in small stones in D. There was no sign of a flanking ditch at the north end of the trench, the slight fall in the level appearing to be quite natural. Meanwhile a cut to A3 continuing the line of the first section southward discovered nothing; there was a step of natural compacted gravelly sand rising from the subsoil that was here a pure white, coarse sand; one or two small stones stood against this step; there was no sign of a kerb. Following up the most positive clue, we cut the trench E westward along the line of the kerb and then another cross-section at F. In both the kerb was well maintained, appearing clearly in F as a wall of two courses.

We had already done more digging than I had anticipated would be necessary, yet although we had proved the mound to be artificial and the kerb on the north looked convincingly like the lobe of a pear-shaped long barrow, the absence of flanking ditches and the total absence of finds was disconcerting. Mr Crawford visited the site at this stage and said he was perfectly convinced by what he saw. I felt, however, that a sceptic could still say that the mound was no more than a spoil heap and the curved revetment some recent stone setting that had chanced to be buried beneath it.

We therefore tried a cut in a fresh area, making our trench some 20 ft. to the west of



FIG. 2. SECTIONS OF THE LONGSTONE LONG BARROW.

THE LONGSTONE, MOTTISTONE

F and again siting it as exactly as possible at right angles to the spine. This trench X-Y proved our salvation. Here the kerb was formed from a stout slab set neatly on edge with a smaller neighbour and two flat drystone resting on the top; a tumble of small stones on the outer side seemed to have fallen from a drystone coping. As I cleared down into the top of the vertical kerbstone, I found a well-made oval flint scraper, $1\frac{1}{2}$ in. in length, resting directly upon it at (1) and a small, plain potsherd nearby. Another sherd was subsequently found beneath the tumble of stone outside the revetment (2). The sherds were unhappily indeterminate; the first, a grey gritty fragment, could well be Windmill Hill ware, while the second is reddish and could be likened to beaker fabrics.

The western trench was finally pushed right through the mound to Z. The step of compacted sand seen in the south end of A was here higher, making a pronounced natural ridge underlying the mound just to the south of its present spine. There was still no certain sign of a kerb, although a stone lying at the end of the trench could conceivably have been derived from one. The bite into the side of the mound was only a few feet to the west of this trench, and it seems that both it and the hollow represent sand diggings that have carried away much of this southern flank and its kerb.

I consider that our discoveries have been enough to confirm Mr Crawford's diagnosis that this mound is indeed a long barrow; it has the distinction of being only the third known example in Wessex to lie off the chalk and limestone (the other two being Holdenhurst, near Bournemouth, and a more doubtful specimen on Pistle Down, Dorset). It was pear-shaped in plan, and the evidence of excavation supports the case of those who believed that the monolith never formed part of a portal or chamber, but was free-standing beyond the east end of the barrow like those at Tinglestone, Gloucestershire, and Lyneham in Oxfordshire. Not only does the revetment appear to be curving behind it, but the longitudinal section suggests that the mound does not extend as far as the stones. The absence of flanking ditches is not altogether surprising on this terrain; the sandy soil is so yielding that they could not have remained intact for a day. Probably the material for the mound would have been collected by scooping over a wide area round it, a process that could not now be detected.

Only full excavation, that we never intended to undertake, could discover whether any internal structure or burial places survive. Nor is it at all certain that it would, for damage and erosion have been severe, and the conditions of work could hardly be more unrewarding. Meanwhile, I have expressed my confidence in the authenticity of the Longstone barrow by asking the Forestry Commission to clear away their trees.

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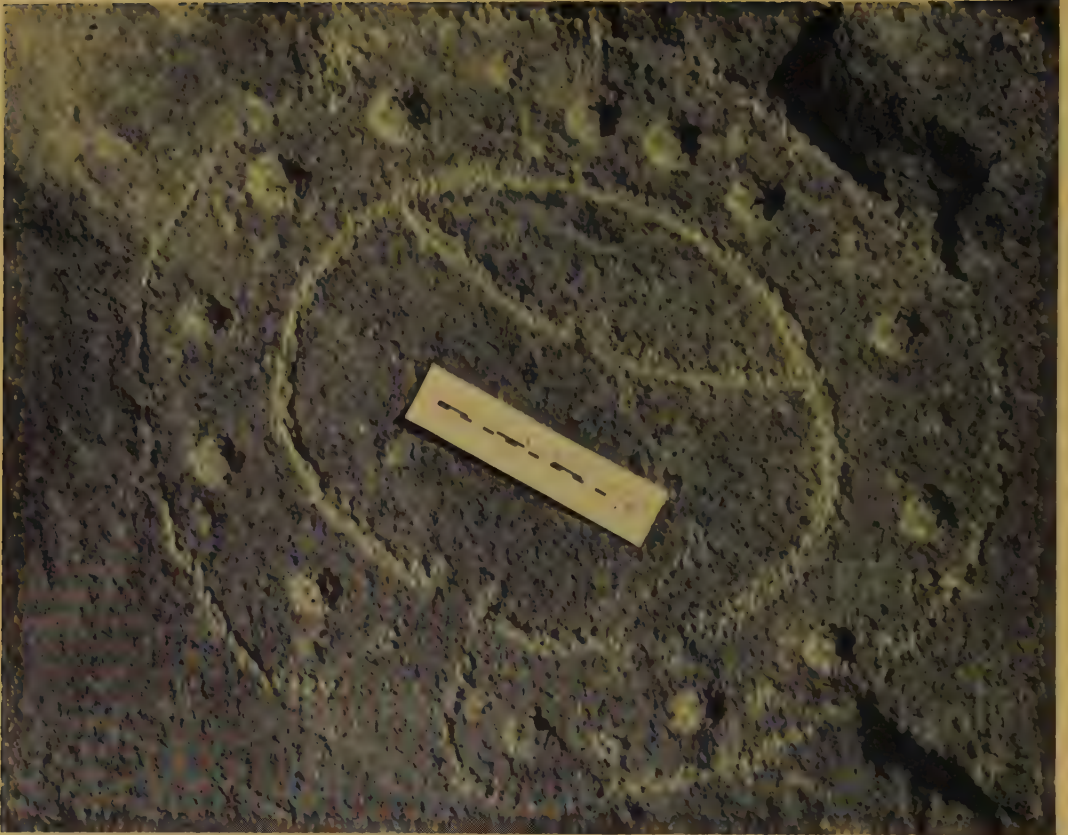
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PLATE I



THE LONG STONE, MOTTISTONE LOOKING SOUTH-WEST

PLATE II



a. PECKED ENGRAVING OF ZULU VILLAGE PLAN; ROUND HUTS BETWEEN ENCLOSING FENCES, THE INNER ONE FOR CATTLE, WITH SUBDIVISION FOR CALVES



b. VERTICAL PHOTOGRAPH OF A MODEL OF A ZULU VILLAGE IN DURBAN MUSEUM. NOTE CLOSE CORRESPONDENCE WITH THE ENGRAVED PLAN ABOVE

PLATE III



a. ZULU BOY PLAYING WITH MODERN ENGRAVING, PUTTING STONES REPRESENTING CATTLE AND CALVES INTO HIS 'VILLAGE.' POINTED STONE USED TO PECK THE DESIGN AT RIGHT BOTTOM CORNER



b. MODERN 'EUROPEANIZED' RECTANGULAR CONVENTIONALIZATION OF VILLAGE DESIGN

PLATE IV



a. NATURAL POINTED STONES USED FOR PECKING



b. TWO ZULU BOYS AT WORK ON PECKING

PLATE V



a. EARLY LONG HOUSE, LINACRO, SKYE



b. LATER HOUSE, CARBOST, NEAR PORTREE, SKYE.
NOTE PRIMITIVE CENTRAL CHIMNEY

PLATE VI

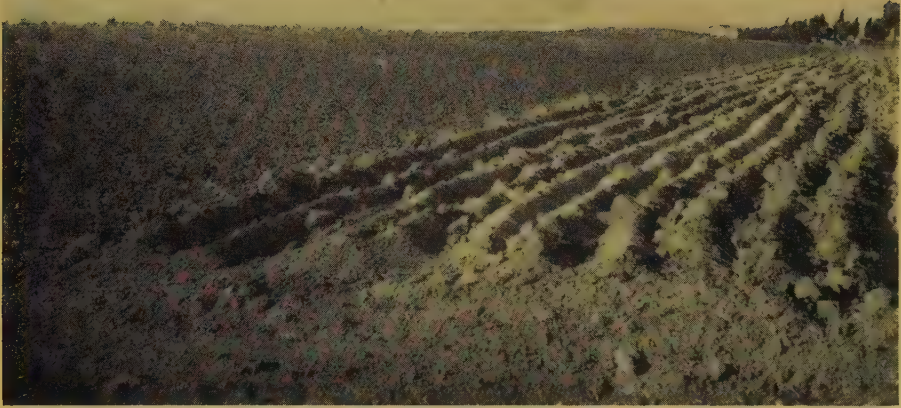


a. LONG-HOUSE, WITH SEPARATE ENTRANCES TO BYRE
AND DWELLINGS, KILMUIR, SKYE

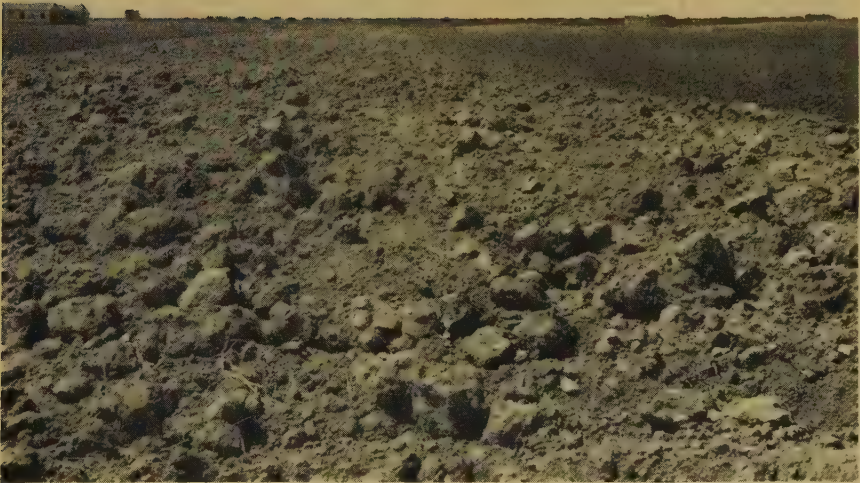


b. HOMESTEAD AT INVER TOTE, SKYE

PLATE VII



a. PART OF THE EARTHEN RAMPART (HERE 7 FT. HIGH)
ROUND THE SITE OF THE ANCIENT CITY OF ARPI, ON LEFT OF ARABLE



b. LOOKING ALONG THE STONY SOIL-MARK WHICH REPRESENTS THE
LEVELLED RAMPART OF ARPI, CURVING AWAY TO THE EXTREME RIGHT



AIR PHOTOGRAPH OF ARPI (SEE PLAN, FIG. 1, p. 168)
Ph Ministero Ditesa-Aeronautica, Rome

Old and New Rock Engravings in Natal, South Africa : A Zulu Game

by B. D. MALAN

Director, Archaeological Survey, Union of South Africa

THE great wealth of the Union of South Africa in prehistoric art, both paintings and engravings, is well known and is the subject of a well-developed and growing literature. The paintings occur in general in the shelters and overhangs of the mountainous areas roughly parallel with the coast, while the engravings generally occur on exposed fixed rocks on the open hills of the highveld interior. Natal lies wholly within the area of paintings and until recently no engravings had been found in that Province.

The author was therefore considerably surprised when, in March 1955, Mr H. Cookson and his son, Mr D. M. Cookson, drew his attention to a large number of rock engravings on the farm Erskine in the district of Weenen, near the township of Muden in Natal. These engravings were described in the *South African Archaeological Bulletin*, vol. x, no. 39, for September 1955. Although they were (as it proved) correctly interpreted as representations of Zulu villages, no satisfactory explanation of their function or purpose could be given. This problem has now been solved.

The engravings, or rather peckings, occur in large numbers on exposed flat surfaces of soft sandstone of the Ecca Sereis. Many of the engravings are weathered to the same condition as the surrounding rock, others are only partially weathered, while some are quite fresh. On the occasion of my first visit I found two pointed pieces of weathered dolerite with freshly battered points still resting on a fresh unfinished pecking (PLATE IVA) and in another case the capital letter R had been executed next to a fresh design. It was therefore clear that the execution of these designs on the rocks was an age-old practice which persisted to the present day. Unfortunately nothing is known about the rate of weathering of the native rock.

With only a few exceptions, the designs are all variations on the same theme. In the most complete drawings there are two concentric circles or ovals with a gap to represent an entrance to the space enclosed. Between the two ovals are from about forty to less than a dozen circular pittings. The inner enclosure is subdivided by an arc of a circle with a gap opposite the main entrance (see PLATE IIA). This design clearly represents a Zulu village with its outer and inner fences, circular huts between them, main entrance, central cattle enclosure and inner subdivision for calves. The hundreds of engravings on the hill present endless variations; in some the outer fence is omitted, in others the enclosure for calves is not represented, in at least one case the cattle enclosure is completely pecked over, in some examples the entrance gap is not shown, in some the entrance gaps are closed off by lines projecting either outwards or inwards, and so on. The over-all sizes of the designs and depth and width of pecking are equally variable. External diameters varied from less than 1 ft. to more than 2 ft., and the depth of the peckings from a few millimetres to about 1 cm. The drawings have the appearance of conventionalized rather than accurate representations.

It is interesting to note that several of the modern examples had assumed a rectangular stylized or schematic form (PLATE IIIB). This conventionalization was not seen amongst the weathered specimens, and is no doubt the result of contact of the boys with Euro-

peans, though the rectangular arrangement has not in fact been adopted for actual Zulu kraals.

I was unable at the time of my first visit to the site to interpret the purpose of these designs and could do no more than put forward several alternative possibilities. One of these proved to be the correct one, suggested to me by Mr D. H. Bowden, a Government Mining Commissioner and authority on Zulu customs. He informed me that in 1936 he observed what appeared to be chemical etchings on the rocks near Nongoma in Zululand similar to the peckings at Erskine. A native, aged about seventy-four, told Mr Bowden that when he was a boy he and his friends made toy oxen of clay and, using cattle dung wetted with urine, fashioned models of villages into which they placed their clay oxen. The models were renewed from time to time on the same places and resulted eventually in permanent markings on the rocks. In order to reach finality, it was decided to revisit the site at Muden and try to find those who were still making these designs. I was successful in this in September 1956, when I enjoyed the services of a Zulu interpreter, kindly lent to me by Mr Cookson.

Two small Zulu boys, aged about eight and six years, who live nearby, were found who told me that they made these designs for a game they played (PLATES III, IVb). They identified one of the designs of their own making and pointed out the various features to me—the outer fence, huts, cattle enclosure, etc., and demonstrated their play which consisted of 'walking' cattle, represented by stones, through the entrance into the cattle enclosure, and smaller stones, representing calves, into the inner enclosure for calves. Asked about the older engravings not made by them, they said, 'Yes, we saw them. The people who made them are not here now; they are very old.' At this stage the father of the boys arrived and confirmed that he had played in the same way when he was a boy, and that even then there were older engravings of the same kind on the site.

I now asked the boys to make an engraving for me, which they willingly did. They searched the vicinity and soon came back with pointed weathered dolerite stones, no doubt derived from dykes which penetrate the sandstones of the area. Using one of these stones as found, without any attempt at shaping it, the younger boy selected a flat area and proceeded to peck directly at the rock, holding the stone mostly in one hand but sometimes using both hands. The circle he was making took a bad shape and, after completing about one-third of it, he abandoned his efforts and moved to a fresh surface. He now first outlined his intended circle by scratching the rock with his pointed stone. When satisfied with this outline, he proceeded to peck along the drawn line in the same manner as before. After a short time the other boy, who had hitherto been an interested spectator, asked permission to help his companion, whereupon both boys worked at the same design (PLATE IVb).

The technique demonstrated by these boys is so simple, direct and effective that it may well be assumed to have been employed in making all the peckings on the site, old as well as new. The same technique could also have produced many of the Stone Age rock engravings of animals, men and conventionalized designs of the highveld of South Africa, and the use of untrimmed, naturally pointed rock fragments might account for the fact that no engraving tools have yet been found in association with the highveld engravings. It must, however, be borne in mind that the Zulu peckings of villages are in a totally different category from those of the Stone Age hunting peoples and have nothing whatever to do with them. The Zulu peckings provide no more than an interesting analogy which must not be given too much value if we are to remain within the bounds of scientific reasoning.

The Skye House

by JAMES WALTON

THE houses of Skye, together with those of the adjoining mainland, constitute a definite regional type of folk building although, as one would expect, they show some resemblances to the Hebridean 'black houses' on the one hand and to those of the Scottish mainland on the other. In plan they are long-houses somewhat similar to those of the Hebrides but they do not have earth- or sand-cored walls nor does the thatch terminate on the wall-top and the roof-trusses are quite distinctive.

The original long-house type, where cattle and human beings shelter under the same roof, is almost non-existent on Skye to-day but many examples have survived as out-buildings and are now utilized as cattle byres. These houses betray little outward indication of having served as dwellings for they have no chimney or smoke vent nor have they any true windows, but such a building at Linacro (PLATE 5a) was stated by the present owner to have been occupied by his grandfather. This house has an external length of 52 ft. and a breadth of 19 ft. and it is rounded-rectangular in plan (FIG. 1b).¹ The rubble walls, which are 5 ft. 6 in. high, have a thickness of 3 ft. 6 in. at the base but they exhibit a pronounced batter, necessary to ensure stability when rubble masonry is employed without mortar. The single doorway, placed almost centrally in the south side wall, is simply a gap the full height of the wall with a wooden lintel stretching across the top.

On entering this gloomy dwelling one steps into the byre, with its hen-roost in one corner. To the right a wooden partition separates the living portion from the cattle stalls and in the middle of the living floor was formerly a hearth of flat stones but this was later moved to the centre of the end wall. The cooking pot was suspended over the fire by a hook and chain hanging from the tie-beam of a roof couple but no chimney was provided to lead away the smoke.

Towards the base of the thatch is an opening, *farleus*, and there is a second similar opening in the byre part. The *farleus* was a widespread feature not only throughout Skye but also in the Hebrides and in the Highlands and it was an object of interest to most of the early travellers. Samuel Johnson, in describing the first Highland cottage which he met on the shores of Loch Ness, wrote, 'No light is admitted but at the entrance and through a hole in the thatch, which gives vent to the smoke. The hole is not directly over the fire, lest the rain should extinguish it; and the smoke therefore naturally fills the place before it escapes'.² Thomas, in describing the Hebridean 'black houses', stated that 'there is no smoke hole, nor other windows than two small holes in the thatch, so that only a "dim religious light" pervades the place on the brightest day'. He adds that 'the custom arises from the desire to keep in the smoke until it fills and saturates the vault of the roof'.³

¹ For discussion of the rounded-rectangular building see:

Campbell, Åke, 'Notes on the Irish House', *Folkliv*, 1938, pp. 173-196.

Lochlainn, Colm O., 'Folkliv, 1937, 2-3, 1938, 2', *The Irish Book Lover*, January, 1940.

Walton, James, 'The Oval House', *ANTIQUITY*, 1952, pp. 135-40.

² Johnson, Samuel, *Journey to the Western Islands of Scotland*, 1775.

³ Thomas, F. L. W., 'On the Primitive Dwellings and Hypogaea of the Outer Hebrides', *Proc. Soc. Ant. Scot.*, 1869, p. 155.

In the Hebrides, then, the absence of proper ventilation was deliberately contrived in order to accumulate the soot and peat tar which was collected for use as manure. This is substantiated by Mitchell, who writes of the Hebridean house that 'the thatch is removed every year for the sake of the soot it contains, which is regarded as a valuable stimulating manure. In order to increase the deposit of soot in the thatch there is no smoke-hole; and further with the same object, the straw is heaped thickly on at the top, so that the roof does not finish in a sharp ridge, but is more or less semicircular in its outline. The inside of the house, therefore, is a constant cloud of peat-reek, which the eyes of those who are unaccustomed to it cannot tolerate. The lowest possible seat accords the best means of partial escape from this irritation. Such smoke as is not deposited in the thatch oozes out over the whole roof, giving the house, when seen from a distance, the general appearance of a dung-heap in warm, wet weather'.⁴

Kissling has suggested⁵ that the *farleus* was employed in conjunction with the doorway as a means of controlling the draught and thus regulating the fire, in the same manner as the opposite doors in Welsh and Irish houses.⁶ The siting of the *farleus* and doorway in relation to the fire does not indicate any such function in the Skye houses and it seems probable that on Skye the *farleus* was primarily intended as a source of illumination.

Other primitive examples of Skye folk building are revealed in the ruins of villages deserted during the 'Clearances' or 'Evictions', when the common grazings of the crofters were taken over by absentee landlords. According to MacLean 'the absentee landlords sublet the land to sheep-farmers or "tacksman", who deprived the crofters of their common grazing, cleared them off the best land and crowded them into the poorest and most barren areas, confiscated their stocks, arbitrarily burned their homes over their very heads and left them to die of cold and starvation or seek refuge in crowded, insanitary, emigrant ships. Between the years 1840 and 1880, 50,000 people were cleared from the glens and islands of the west of Scotland and hundreds more were perishing from want of proper shelter, food, clothing and sanitation'.⁷

Two particularly fine examples of such ruined villages, in which the house walls still stand to almost their original height (PLATE VI), are the villages of Old Kilmuir and Old Duntulm in Trotternish. The remains at Old Kilmuir indicate that the village consisted of a cluster of houses and outbuildings surrounded by small fields of irregular shape bounded by ditches with earth banks surmounted by low rubble walls. In appearance it would have been very similar to the Donegal village of Ballyhoorisky, Fanad, photographed by the late R. J. Welch⁸ and quoted by Estyn Evans as a typical example of a nucleated settlement associated with open field (rundale) cultivation. Evans regards this association as probably being pre-Celtic in origin and considers that in Donegal 'the scattering of the habitations with their long "strip farms" was a process which took place mainly in the 19th century'.⁹

Judging by the ruined villages examined, this appears to have been equally true on Skye and the other Scottish islands, although the change may have begun a little earlier. Thomas, writing of the Hebridean settlements in 1869, says that 'in the good old days, when the lands were runrig, the tenants of the same farm dwelt in an agglomerated heap

⁴ Mitchell, Arthur, *The Past in the Present*, 1880.

⁵ Kissling, Werner, 'The Character and Purpose of the Hebridean Black House', *J.R.A.I.*, 1943, p. 84.

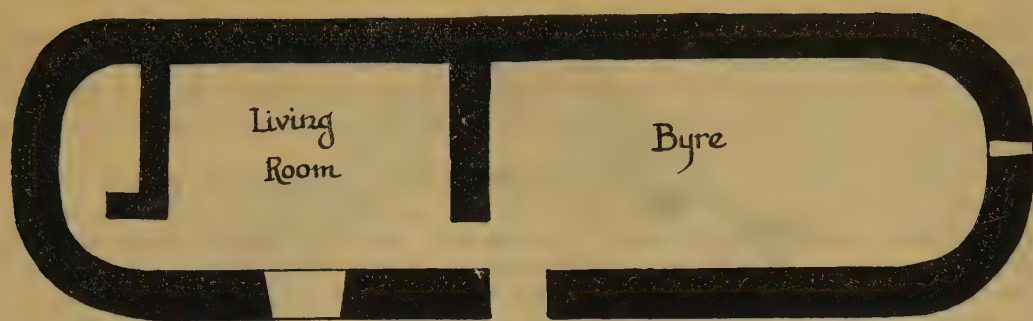
⁶ Campbell, Åke, 'Notes on the Irish House', *Folkliv*, 1937, pp. 230-1.

⁷ MacLean, C. I., 'Hebridean Traditions', *Gwerin*, 1956, p. 23.

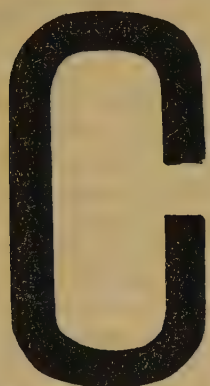
⁸ Evans, E. Estyn, 'Donegal Survivals', *ANTIQUITY*, 1939, pl. I.

⁹ Evans, E. Estyn, *op. cit.*, pp. 208-9.

THE SKYE HOUSE

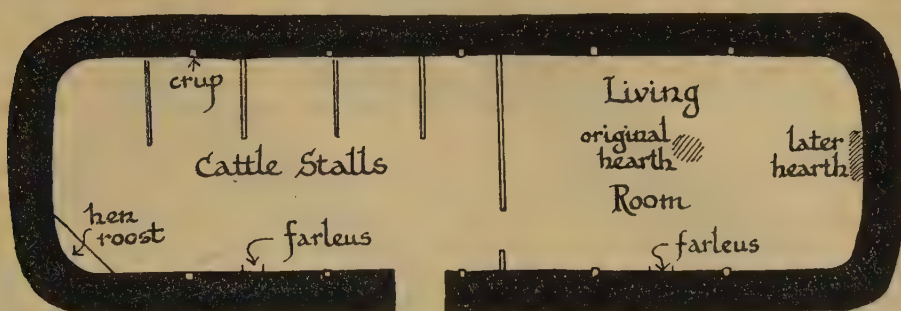


a. Ruined Homestead, Kilmuir Old Village

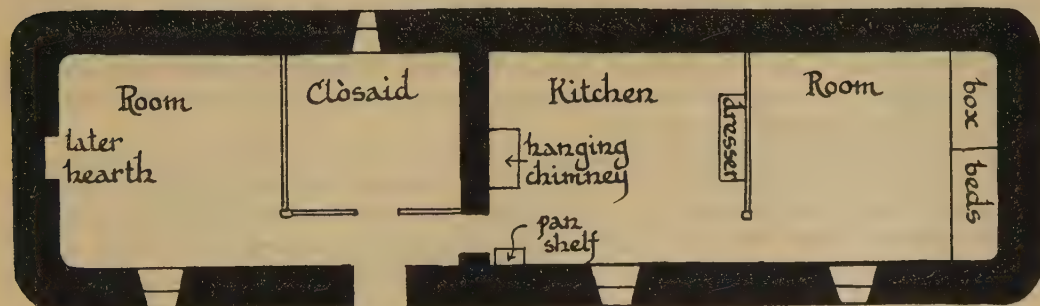


SKYE HOUSE PLANS

10 0 10 20 30 feet



b. Linacro



Walton, 1956

c. Carbost

FIG. 1

of cottages, called a Creaga'.¹⁰ A *creaga* comprised two or more families, forming a social unit and utilizing the common lands and pastures according to their respective allocations. Under the runrig system the common arable land was periodically divided among the tenants, each individual holding one field until such time as a change in population necessitated a redistribution of the land.

In view of this lack of security of tenure there was no incentive for the tenant to establish his home near his arable land and the population of any particular area was concentrated, therefore, in a *creaga*, or township. The agglomerated *creaga* settlement with its associated runrig system of cultivation was largely terminated by the evictions of the mid-19th century. During the later part of the 19th century, when the original occupiers were resettled on their lands, each tenant was granted the assured tenure of a long strip of land at the end of which he built his house. The township remained but instead of being a nucleated group of dwellings surrounded by common fields, it became a straggling line of crofts.

A typical house of the Old Kilmuir village (FIG. 1a) has an overall length of 70 ft. and a width of 19 ft. with a pronounced external and internal rounding at the ends to give a rounded-rectangular plan. This rounding of the ends became progressively less marked with subsequent development (FIG. 1). The walls have a definite batter with a thickness of 3 ft. 3 in. at the base and in places they still stand to a height of nearly 6 ft. The single entrance is placed almost centrally in the south wall and it leads into what was probably the byre part of the building, which is separated from the living part by a stone wall.

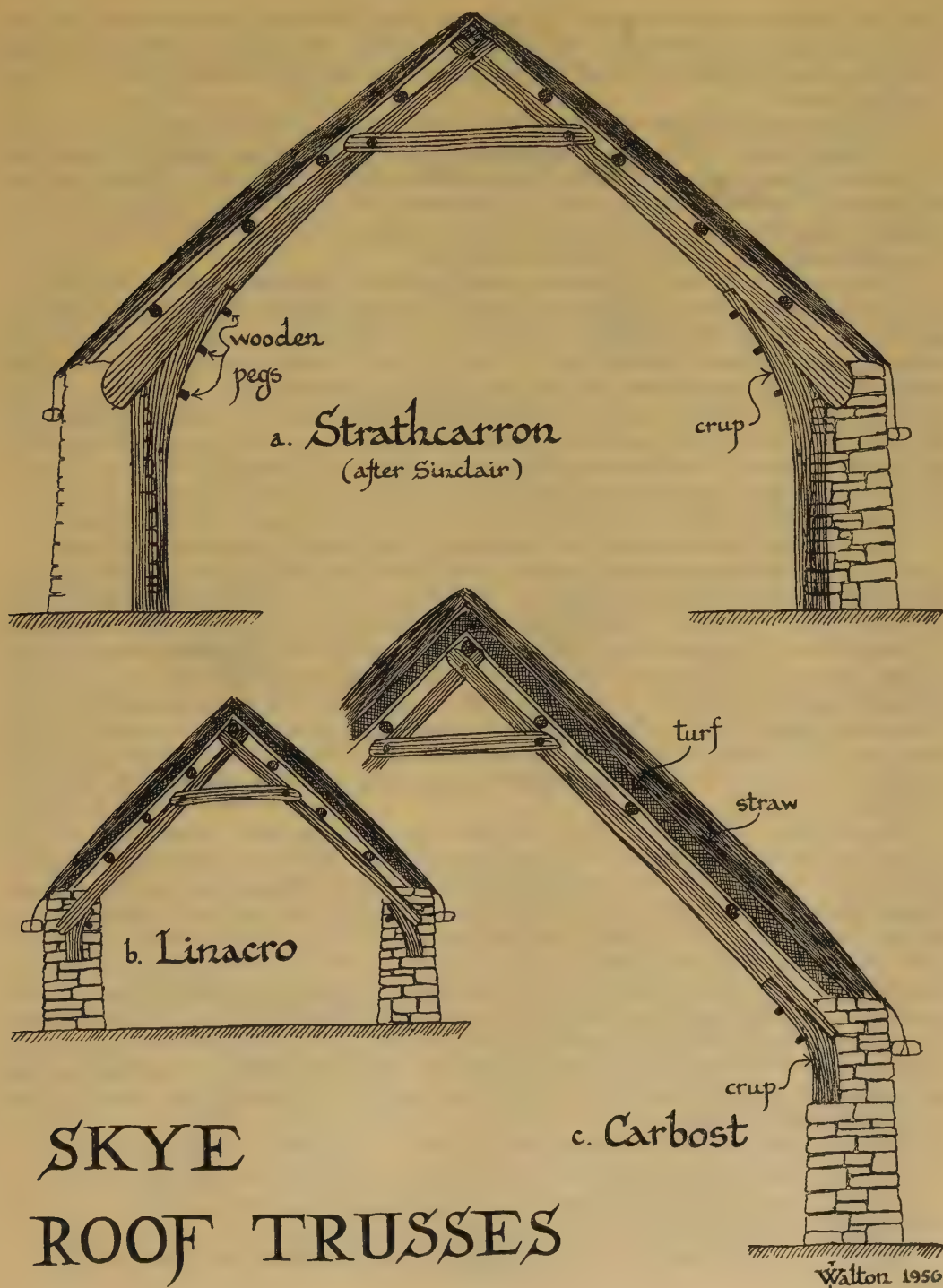
At the end of what I have termed the living-room, which is illuminated by a small splayed window, a part of the room is walled-off to form a smaller enclosure, the purpose of which I have been unable to determine. It may have been occupied by a bed or it may have served as a churn room. The second major division of the building, which I have referred to as a byre, has a single narrow slit window in the end wall but no other architectural features of interest. At right angles to the main building is a second similar building, 27 ft. long by 17 ft. wide, which may have been a contemporaneous byre or may have been added at a later date when the larger building was changed from a long-house to a dwelling only.

With the removal of the byre from the Skye house the ground plan underwent several changes which appear to have been the result of cultural diffusion from the mainland. The most important new feature is the *clòsaid*, a small compartment surrounded by wooden partitions, which faces the entrance and is entered either from the entrance lobby or from one of the other two rooms (FIG. 1c). The *clòsaid*, which accommodates a bed, is illuminated by a narrow slit in the rear wall. Of the other two rooms the original living room became a kitchen but box-beds are frequently found either at the end or along one side and the other important pieces of furniture, the dresser and the langsettle, are also kept in the same room. The kitchen hearth is moved against the central wall where it is covered by a 'hanging chimney', *similear crochaidh*, made of boards or wattles smeared with clay and cow dung, which conducts the smoke through the roof, where it is bound with the thatch to form a primitive chimney (PLATE vb).

The other room is merely the space occupied by the byre in the original long-house. It has no real function in the Skye way of life and has never served any specific purpose. Frequently it has a fireplace built into the end wall, a cultural borrowing from the mainland gabled type, and it may contain one or two beds although the box-beds of the family are still retained in their place in the kitchen. As a further development the kitchen is divided by

¹⁰ Thomas, F. L. W., *op. cit.*, p. 156.

THE SKYE HOUSE



SKYE ROOF TRUSSES

FIG. 2

a wooden partition into two rooms, the partition doing little more than screen off the box-beds (FIG. 1c). The *farleus* gave way to a wall window, although it is little more than a glazed opening in the upper part of the wall (PLATES vb and via) and was probably derived from the *farleus*.

With the need for removing the cattle from the dwelling one of two alternative arrangements was followed. In the one the cattle continued to be housed under the same roof but the byre was separated from the living-room by a stone wall and a separate entrance was provided for the cattle (PLATE via). In the second the byre became a separate building, similar in construction to the dwelling itself, and, together with a number of small stores, it was enclosed by a low stone wall (PLATE vib).

The roof truss of the Skye house is one of its most interesting features for, whilst it is fundamentally of cruck type as was general throughout Scotland, the principals are scarfed, not after the Orkney-Caithness fashion but more in the manner of the Welsh and western England scarfed trusses (FIGS. 2 and 3). Each couple consists of two principal rafters which cross at the apex to carry the ridge-tree, *maide-droma*, and which are tied together by a collar-beam, *maide-tarsuinn*, placed usually about two-thirds of the way up the roof. The feet of the couples are notched and pegged to upright posts, *crup*, which are curved at the top to fit the slope of the rafters (FIG. 2). Originally the *crup* seems to have extended down to the ground (FIGS. 2a and 3a) but in later examples the *crup* is shortened and either rests on a ledged recess in the wall or is buried in the wall itself.

Such a truss removes some of the thrust of the roof from the wall-top and transfers it to the *crup* and Sinclair records an instance of a building on Skye, the walls of which were not so substantially built and consequently birched couples, scarfed to *crup*, were set along the walls at 3-ft. intervals.¹¹ Estyn Evans, with reference to Donegal houses, states that 'if the walls are of clay, sod or turf, the couples may be supported on internal beams placed upright against the side-walls, but the purlin method is generally adopted to avoid the thrust of the couple ends'.¹² Although the Skye truss is of cruck form the main function of the *crup* appears to be the distribution of the roof thrust and it may not represent a cruck derivative. In addition to the scarfed constructions from Donegal Sir Cyril Fox has also recorded what appears to be an identical truss from Maes-y-bidian, Abergorlech, Carmarthenshire (FIG. 3c).¹³

In south-west England scarfed principals are fairly common, particularly around Sturminster Newton, in Dorset, but these exhibit certain differences from those of Skye, Donegal and Abergorlech. The principal rafters and the uprights are notched but instead of being pegged from underneath they are jointed together and the joint is pegged from the side (FIG. 3d-i). In the method of jointing considerable variation is exhibited even in the one village of Sturminster Newton. Usually the top of the upright post is curved inwards for a short distance and the principal rafter is straight, the mortice being in the foot of the rafter and the tenon tongue on the top of the upright (FIG. 3e). In the trusses of a house at Market Cross, however, the feet of the principal rafters are curved and tenoned whereas the upright posts are morticed (FIG. 3g). Further, in a small barn in the same village the uprights and rafters are notched and jointed in addition to being pegged from underneath (FIG. 3e).

This wide variation in one small area suggests that scarfed construction in Dorset

¹¹ Sinclair, Colin, *The Thatched Houses of the Old Highlands*, 1953, p. 36.

¹² Evans, E. Estyn, *Irish Heritage*, 1942, p. 63.

¹³ Fox, Cyril, 'Somerset from a South Wales Viewpoint', *Proc. Som. Arch. Soc.*, 1951, p. 58.

THE SKYE HOUSE

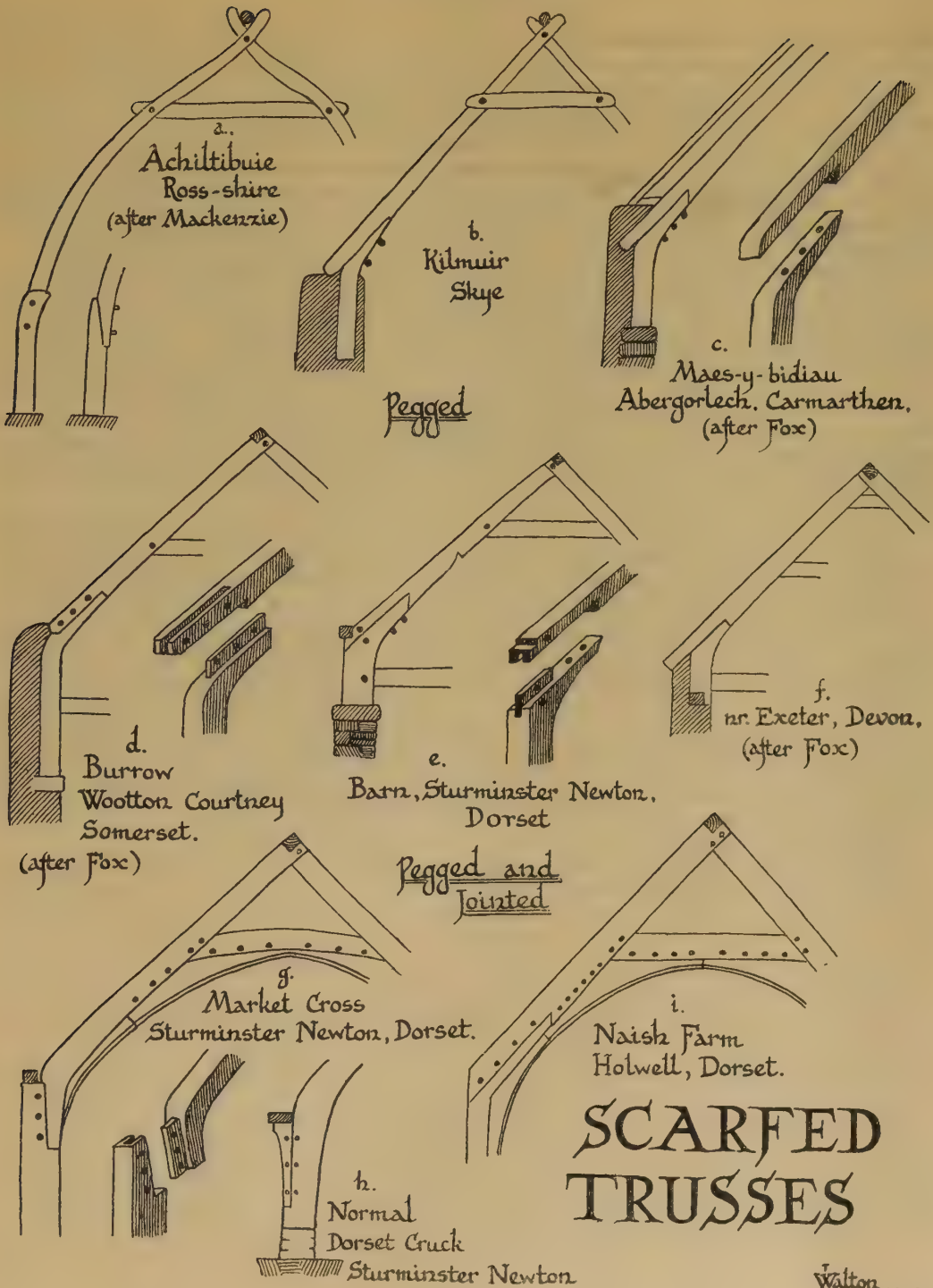


FIG. 3

arose locally from the normal cruck truss. The cruck trusses in that county are slightly elbowed and the two members are halved at the apex and pegged with a single peg. The ridge-tree rests in a notch cut in one of the crucks only (FIG. 3d-i). This type of ridge-tree support appears to be general throughout Dorset, Somerset and Devon wherever crucks or scarfed principals were employed. The wall-post was morticed and tenoned to the cruck, tapering from top to bottom to provide a vertical face, and the wall-plate was carried on the top of the wall-posts (FIG. 3h). It appears that the local carpenters, influenced by the introduction of the framed truss, decided that the wall-post and cruck could be combined if scarfing were employed and this was done in one of the ways indicated (FIGS. 3e and g).

A truss from a house near Exeter (FIG. 3f) shows some resemblance to that from Abergorlech (FIG. 3c) in that the rafter projects beyond the upright, as it does also in the Skye trusses, but the method of carrying the ridge-tree is the same as that found in Dorset. Sir Cyril Fox has sought a diffusion of the scarfed construction from Somerset to South Wales.¹⁴ If such a diffusion did occur it must have been considerably before the beginning of the 16th century for the method of scarfing at the early 16th-century house at Burrow, Wootton Courtney (FIG. 3d) represents a definite advance in construction over that at Abergorlech (FIG. 3c). In other words, after the scarfed principal had spread to Wales it then developed locally in south-west England and these subsequent developments did not spread to Wales.

The scarfed principal occurs in south-west England, in Carmarthen, in Donegal and in Skye. Whether this indicates a cultural diffusion and a movement from south to north at an early date it is not possible to say at present. There are constructional differences but these may be the result of local developments under the influence of later techniques. Sir Cyril Fox has indicated architectural parallels between Pembrokeshire and Caithness and suggested a dissemination by the 'Atlantic route' along the west coast.¹⁵ It is true that similar architectural features of unusual character do occur in south-west England, Wales and north-west Scotland. The Skye roof truss may be the result of an early cultural spread from the south, it may be a purely local development in order to distribute the roof thrust, or it may represent a modification, due to the lack of suitable timbers, of the cruck construction which was formerly widespread throughout Scotland.

¹⁴ Fox, Cyril, *op. cit.*, p. 58.

¹⁵ Fox, Cyril, 'The Round-Chimneyed Farm-Houses of Northern Pembrokeshire', in *Aspects of Archaeology in Britain and Beyond*, 1951, p. 133.

Some Recent Books and Articles

The inclusion of a book in this list does not preclude its subsequent review

- THE RELATION OF TEKTTITES TO ARCHAEOLOGY, by H. O. OTLEY BEYER. *Proc. 4th Far Eastern Congress*, Part I, published by the National Research Council of the Philippines, Diliman, Quezon City, 1956. [Tekttites are objects of natural glass of meteoric origin. They are found in large quantities in certain regions and seem to represent meteoric showers of great intensity that fell at five main periods, from pre- or early Tertiary to post- or late Pleistocene. They are therefore useful for dating strata. They were also used for magical and practical purposes.]
- THE USE AND DISTRIBUTION OF FAIENCE IN THE ANCIENT EAST AND PREHISTORIC EUROPE, by J. F. S. STONE; with notes on the spectrochemical analysis of faience, by L. C. Thomas. *Proc. Preh. Soc.*, N.S. xxii, March 1957, 37-84. [This is in effect a monograph of nearly 50 pages, reviewing the evidence after twenty years. Faience beads are a key fossil for dating, and this study of them is indispensable to all excavators.]
- THE 'DOLMENS' OF MALTA AND THE ORIGINS OF THE TARXIEN CEMETERY CULTURE, by JOHN D. EVANS. *Proc. Preh. Soc.*, N.S. xxii, March, 1957, 85-101. [A most suggestive and important study of an almost vanished type of monument, of which we may hear more in the near future. The same number of *Proc. Preh. Soc.* contains many other important articles, as usual, which space does not permit to be quoted.]
- CARP'S TONGUE SWORDS IN SPAIN, FRANCE AND ITALY, by HUGH HENCKEN. *Zephyrus* (Salamanca University), vii, 1956, 125-178. [A very valuable study of a Bronze Age problem, covering much ground.]
- DIE ERSTE PRÄKERAMISCHE BÄURLICHE SIEDLUNG DER JUNGSTEINZEIT IN EUROPA, by VLADIMIR MILOJČIĆ. *Germania*, xxxiv, 3/4, 1956, 208-210. [The first announcement of an important discovery in Thessaly.]
- VILA NOVA DE S. PEDRO; eine befestigte Siedlung der Kupferzeit in Portugal, by AFONSO DO PAÇO and EDWARD SANGMEISTER. *Germania*, xxxiv, 3/4, 1956, 211-230. [Important because most of the hitherto explored sites of this period have been burials, not (as this) habitation sites.]
- A REAPPRAISAL OF THE FREMONT CULTURE, by H. M. WORMINGTON. ARCHAEOLOGICAL INVESTIGATIONS ON THE UNCOMPAHGRE PLATEAU IN WEST CENTRAL COLORADO, by H. M. WORMINGTON and ROBERT H. LISTER, Denver Museum of Natural History, Denver, Colorado, 1955, 1956. [The first two numbers in a welcome new series of *Proceedings of the Denver Museum of Natural History*. They record the results of excavations in a neglected area of Western Colorado and Eastern Utah, and make a solid contribution to the archaeology of the margin of the better-known South-west.]
- KLAMATH PREHISTORY, The prehistory of the Klamath Lake area, Oregon, by L. S. CRESSMAN, with appendices by William G. Haag and William S. Laughlin, *Transactions of the American Philosophical Society*, N.S., vol. 46, part 4, 1956. \$2.00. [A detailed report on a part of Oregon adjoining the Great Basin. A very useful study of the adaptation of a food-gathering and fishing economy to its surroundings over a period lasting from before 5500 B.C. to recent times. G.H.S.B.]

Books Received

The inclusion of a book in this list does not preclude its subsequent review

- ROMAN SPAIN: an Introduction to the Roman Antiquities of Spain and Portugal, by F. J. WISEMAN. G. Bell & Sons, London, 1956, 18s. 6d.
- JOURNEY INTO ROMAN BRITAIN, by G. M. DURANT. G. Bell & Sons, London, 1957, £1.
- THE ROMANS WERE HERE, by JACK LINDSAY. Frederick Muller Ltd., London, 1956, £1 5s.
- SEEING ROMAN BRITAIN, by LEONARD COTTRELL. Evans Bros., London, 1956, £1 1s.
- NARROW PASS, BLACK MOUNTAIN: the discovery of the Hitlite Empire, by C. W. CERAM. Gollancz, London, 1956, £1 5s.
- TIMES AND PLACES, by the late HAROLD PEAKE and HERBERT J. FLEURE (*The Corridors of Time*, vol. x). Oxford, 1956, £2 2s.
- THEY WROTE ON CLAY, by EDWARD CHIERA, edited by GEORGE G. CAMERON. Phoenix Books, the Univ. of Chicago Press, 1956. [Cambridge University Press, 8s. 6d.]
- ANGKOR: hommes et pierres, by BERNARD-PHILIPPE GROSlier. Arthaud [Paris?], 1956. [A magnificent picture-book.]
- THE BURIED PYRAMID, by M. ZAKARIA GONEIM. Longmans, Green & Co., London, 1956, 18s.
- THE LAWS OF ESHNUNNA, by A. GOETZE. 1956.
- AN ANTHROPOLOGICAL RECONNAISSANCE in the Near East, 1950, by HENRY FIELD. Peabody Museum, 1956.
- COLLECTIONS PRÉHISTORIQUES: Planches, Album No. 1. Arts et Métiers, Paris. [Mostly flints.]
- DIE SEPTUAGINTA UND DAS NEUE TESTAMENT, by DAVID TABACHOVITZ. Gleerup, Lund, 1956, 20 Swedish crowns.
- PRIMITIVE CHRISTIANITY in its Contemporary Setting, by RUDOLF BULTMANN, translated by the Rev. R. H. FULLER. Thames and Hudson, 1956, 18s.
- PUZZLE OF THE PAST: the Wonderful World of Archaeology, by RONALD JESSUP. Rathbone Books, 1956, 15s.
- COGNAC: grotte peinte, by L. MÉROC and J. MAZET. Kohlhammer, Stuttgart, 1956, DM. 9.
- JAHRBUCH DES RÖMISCH-GERMANISCHEN ZENTRALMUSEUMS MAINZ, 3 Jahrgang, 1956.
- STUDIEN ZUR ARCHITEKTUR KONSTANTINOPELS im 5 und 6 Jahrhundert nach Christus, by F. W. DEICHMANN. Bruno Grimm, Baden-Baden, 1956, DM. 29.70.
- CYRENAICAN EXPEDITION, edited by ALAN ROWE. Manchester University Press, 1956, £1 5s.
- DER NEANDERTALER UND SEINE UMWELT: Gedenkschrift zur Erinnerung an die Auffindung im Jahre 1856, by KURT TACKENBERG. Habelt, Bonn, 1956, DM. 9.50.
- ETRUSKISCHES KUNST-HANDWERK (Bilderheft des Römisch-Germanischen Zentralmuseums Mainz), by H. KUTHMANN. 6 pp. and 16 plates. Mainz, 1956.
- GREECE AND ROME, vol. III, No. 2, Jubilee Number, 1931-56. Oxford, 1956, 12s.
- MEMOIRS OF THE AMERICAN ACADEMY IN ROME, vol. XXIV (1956), \$10.50.
- OPUSCULA ATHENIENSIA, vol. II (1955). Lund. [An important new periodical of the Swedish Institute at Athens including classical, prehistoric and Cypriote studies.—J. B.]

BOOKS RECEIVED

- EPONA, 'Déesse Gauloise des chevaux protectrice des cavaliers', by RENÉ MAGNEN, with an inventory of monuments by Émile Thevenot. 72 pp. with 66 plates. Delmas, 1953.
- A HISTORICAL COMMENTARY ON THUCYDIDES, vols. II-III (Thuc. Books II-V, 24), by A. W. GOMME. Oxford, 1956, 84s.
- A HISTORICAL COMMENTARY ON POLYBIUS, vol. I (Books I-VI), by F. W. WALBANK. Oxford, 1957, 84s.
- A HITTITE CEMETERY AT GORDION, by MACHTELD J. MELLINK. University of Pennsylvania Museum, 1956, \$2.50. [It appears that a segmented faience bead was found (plate 21, no. n), but the author of this report seems ignorant of its significance and also of that of the biconical faience beads on Necklace b, pl. 22.]
- INVENTARIA ARCHAEOLOGICA. Germany, no. 3. Habelt, Bonn, 1956.
- ANTAS NAS HERDALES da Casa de Bragança no Concelho de Estremoz, by GEORG AND VERA LEISNER, Lisbon, 1955.
- THE PERSONALITY OF INDIA, by B. SUBBARAO. Baroda, 1956.
- ISRAEL AND REVELATION, by ERIC VOEGELIN. Louisiana State University Press. Price in United Kingdom 60s. net. [This is a first volume of a series of World History, of which the other numbers will be: II. *The World of the Polis*; III. *Plato and Aristotle*; IV. *Empire and Christianity*; v. *The Protestant Centuries*; VI. *The Crisis of Western Civilization*. It treats the long period of the History of Israel and of the Ancient Empires as one of a gradual and progressive revelation.—C.S.]
- THE ROMAN INSCRIBED AND SCULPTURED STONES IN THE GROSVENOR MUSEUM, CHESTER, by R. P. WRIGHT and I. A. RICHMOND. The Chester and North Wales Archaeological Society, Grosvenor Museum, Chester, 1955, 25s. [Contains full descriptions, with excellent half-tone illustrations, of over 200 stones, mostly tombstones. Classified indices increase the value of this well-produced catalogue.—F.A.]
- BRIDGEND: THE STORY OF A MARKET TOWN, by HENRY JOHN RANDALL. R. H. Johns, Newport, Mon., 1955, 21s. [It is evident that the author found the writing of this local history, and the research which it entailed, of absorbing interest.—F.A.]
- EARLY MAN IN SOUTH BUCKINGHAMSHIRE, by J. F. HEAD. John Wright and Sons, Ltd., Bristol, 1955. No price given. [A detailed and adequately illustrated account of the antiquities—fixed and movable—of the region follows a brief survey of their geological and geographical setting.—F.A.]
- WHEATLEY RECORDS, 956-1956. The Oxfordshire Record Society, 1956, 25s. [Wheatley is a large village six miles east of Oxford. There are reproductions of many of the records included in the collection.—F.A.]
- THE MEDIEVAL FLOOR-TILES OF LEICESTERSHIRE, by NORMA R. WHITCOMB. The Leicestershire Archaeological and Historical Society, The Guildhall, Leicester, 25s. [A fully illustrated catalogue with notes and index.—F.A.]
- ESSAYS IN HONOUR OF FRANK WARREN, edited by W. J. CARPENTER TURNER. H. M. Gilbert and Son, Southampton, 1956. No price given. [This is vol. xx of the *Papers and Proceedings of the Hampshire Field Club and Archaeological Society*, specially bound and issued as a festschrift to Mr Warren. All the essays are of interest and the contributors include O. G. S. Crawford and C. F. C. Hawkes.—F.A.]
- SHEFFIELD AND ITS REGION: A SCIENTIFIC AND HISTORICAL SURVEY, edited by DAVID L. LINTON. [This handsome volume, printed by the O.U.P., was published for the British Association by the Local Executive Committee in Sheffield on the occasion of the meeting in that city in 1956. The survey is encyclopedic in its scope and on its historical side it covers every period from the lower Paleolithic to the present day. The contributors are mainly professors or lecturers on the staff of Sheffield University

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- or technical officers of the Sheffield Corporation. No price is given nor is there any indication how anyone interested may obtain a copy of the book.—F.A.]
- CATALOGUE OF GREEK AND ROMAN ANTIQUITIES IN THE DUMBARTON OAKS COLLECTION, by G. M. A. RICHTER. 78 pp. with 27 plates. Harvard, 1956, 40s. [Includes Persepolitan reliefs and Antioch mosaics. Nearly all the important pieces have been published before but Miss Richter's observations on little-known or loved periods and objects are always valuable. Fine illustrations.—J. B.]
- LE SANCTUAIRE D'APOLLON PYTHÉEN À ARGOS (Études Péloponnésiennes I), by W. VOLLGRAFF, with W. van der Pluym and A. Roes. Paris, 1956. [The first of a new series from the French School which will be largely devoted to their excavations at Argos and Gortys in Arcadia of recent years. The present volume, however, deals with an excavation now fifty years old. It is most creditable that it should still be remembered and so well presented.—J. B.]
- LABRAUNDA, vol. I, part I: The Propylaea, by K. JEPPESEN. 52 pp. with 30 figures, 23 plates and a plan. Lund, 1955, Sw. Crs. 35. [The publication of the Swedish excavations of 1948 to 1951 is planned for 4 volumes in 13 parts. The two propylaea to the sanctuary are 4th century B.C. Ionic.—J. B.]
- ATHENS. Photographs by M. HÜRLIMANN, introduction by REX WARNER. 118 pp. with 74 black and white and 5 colour plates. Thames and Hudson, 1956, 25s. [Nostalgically good photographs and a most sympathetic introduction. Sunium in the summer sun with dozing and chatting visitors reconciles ancient and modern; in most such books they clash unhappily.—J. B.]
- THE ANCIENT MAYA, by SYLVANUS G. MORLEY. Third edition, revised by George W. Brainerd. pp. x + 494, 102 plates, 57 figures, 10 tables. Stanford University Press, 1956, £4. [This new edition brings a very useful handbook up to date. Space is made for some new information by pruning Dr Morley's picturesque style. Pull-outs are eliminated by reduction in scale, which is generally an improvement, but it makes two maps rather difficult to read. Two weak points of the older editions remain—the bad definition of a few of the plates and the unbalanced selection of the pottery illustrations.—G. H. S. B.]
- MODOC ROCK SHELTER, Preliminary Report, by MELVIN L. FOWLER and HOWARD WINTERS. Illinois State Museum, 1956, 25 cents.
- ARCHAEOLOGY OF THE FUNERAL MOUND, OCMULGEE NATIONAL MONUMENT, by C. H. FAIRBANKS. National Park Service, U.S. Dept. of the Interior, Washington, 1956, \$1.00.

Notes and News

THE ANCIENT CITY OF ARPI IN APULIA (PLATES VII AND VIII)

This is a brief and preliminary record of a discovery of unique interest in the archaeology of Italy and of Europe. It is only a prelude to a detailed study. In September 1956 I succeeded in mapping, by Air Archaeology, the buried site of the city of Arpi, well-known in pre-Roman and Roman times, but deserted for the past 1000 years. It lies $2\frac{1}{2}$ miles north of Foggia at the centre of the great Apulian plain in South Italy. The site is enclosed by an earthwork which has the enormous diameter of $3\frac{1}{4}$ miles! Although this earthwork has been much levelled by ploughing, it is clearly visible on the ground. But, until now, no systematic map had been produced.

I have had to examine thousands of air photographs of this region before finding a series which had been taken when conditions were favourable for revealing this 'Buried Landscape' at Arpi. In some seasons air photos show little here. The vertical view on PLATE VIII was taken on 20 September, 1954 for normal mapping and not for archaeology. It is one of many which I was privileged to study in the Ministero Difesa-Aeronautica in Rome,—work which I look forward to continuing in the coming months. It is a duty and pleasure to offer most grateful thanks for these unique facilities for archaeological research, so courteously granted to me by the Italian authorities. Particular gratitude is due to Colonel Pernazza and Lt.-Colonel Cazzaniga of the Stato Maggiore, to Ing. C. M. Lerici, and other friends and colleagues. In return, I was able to make some substantial contributions to the archaeological heritage of Italy. One of my discoveries was on the site of the Greek city-colony at Metapontum. Here, distinct traces of a buried street-plan were found—resembling the buried street-plan which I discovered in 1945 at Paestum from British air photos and which I have often described and exhibited since then. I am publishing details of my work on the important city of Metapontum in the very near future. It must not be imagined that such discoveries are easy to make; they require much hard work and experience. For example, PLATE VIII had the very small scale of 1 : 36,000.

At Arpi, it is only by the interpretation of air photographs that an archaeologist could demonstrate the certain proof of this vast perimeter and dare to affirm it. At present I am busy with research, to map any traces of ancient Italic cities which are comparable. But Arpi will always be outstandingly notable, and no lay-out of this type has ever before been demonstrated so clearly and completely in Italy.

Its foundation was attributed both by Greek and Roman historians to Diomedes of Argos, who is said to have named it 'Argos Hippion'. According to some Classical writers it was known later as 'Argyrippa'. But the coins used by the city's inhabitants are inscribed 'Arpanoi' in Greek. The site is mentioned in more than a dozen Classical sources, including Lycophron, Dionysius, Polybius, Pliny, Livy, Strabo, Vergil, Ovid, Cicero, etc.

Today it is a vast expanse of ploughed fields. But there are remains of an earthwork, round the city, which survives to a height of 7 ft. and measures more than 100 ft. across (PLATE VII). This rampart can also be traced along the edge of the steep slope overlooking the river and marshy ground to the north.

Strabo (VI, 3, 9) in Augustan times records that Arpi was formerly one of the largest Italiote towns, and that this fact was obvious from the great area it covered. White

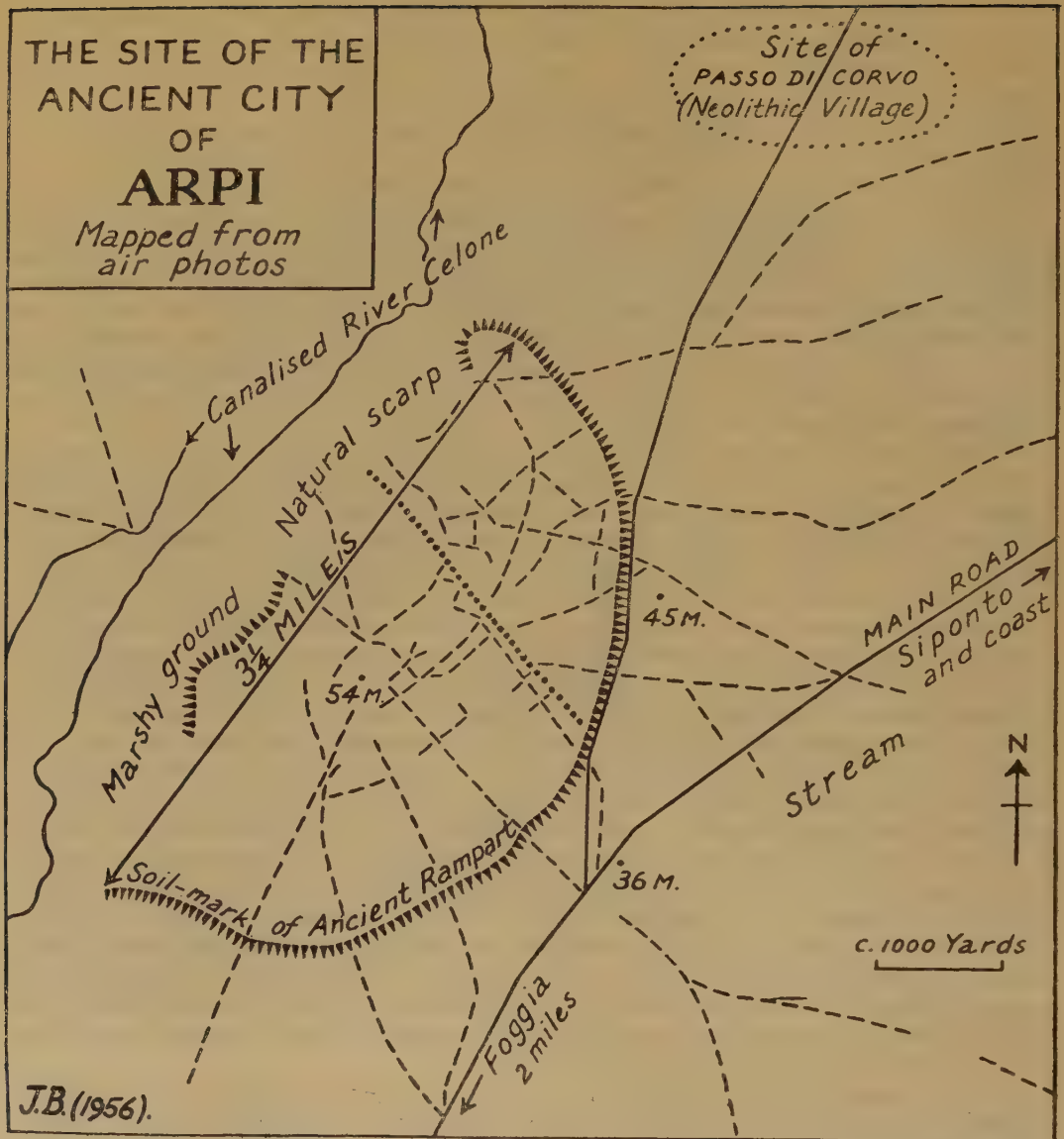


FIG. 1. PLAN OF ARPI. SEE AIR-PHOTO, PLATE VIII. BURIED ROADS SHOWN BY BROKEN LINES.

'soil-marks' today reveal the course of the rampart, being caused by an extra number of small stones in the soil. This is especially clear after September ploughing. Inside the city, a long straight 'soil-mark' (over 50 ft. wide and up to 3 ft. high) crosses the site, and on FIG. 1 is shown by a dotted line.

Radiating for miles from the city are more than twelve buried roads, never previously discovered (FIG. 1). Also, inside the city's area they are continued by numerous marks suggesting streets to the centre, the highest point. It is significant that their lines corre-

spond to the curve of the rampart, and that there is no similar pattern outside it. All these were revealed by 'soil-marks' and 'weed-marks'. There is an extra depth of soil filling the roads. At ground-level they are difficult to see without air photos as a guide. They form broad shallow depressions; 100 to 150 ft. wide, but only a foot or two deep.

In 1945 my detailed study of this region from British air photos, revealed similar traces of ancient buried roads radiating from the site of Salapia (Salpi), which was the port for Arpi as Strabo tells, and other photos also showed me identical traces of buried roads which radiated from Vulci in Etruria. It is simple to distinguish them from the medieval *tratturi*, sheep-ways, to which I have also given detailed photographic interpretation.

When I saw this air photo of Arpi, I could scarcely believe its evidence of unique size! But experience said 'Yes'. So, my wife and I took the first train, to ground-check the discoveries on foot. The plain was scorched by a burning heat-wave. Even the inhabitants protested it was *caldo per morire*. But we scoured the huge bare site, and found that numerous surface finds of Classical pottery extended *right up to the rampart*. There were sherds datable to the 5th century B.C.: some were a few centuries later, others probably earlier. Many were painted. Some were imported from Greece. Detailed examination is in progress. Arpi has no fine monuments above ground, for the site was pillaged to build Foggia in the early Middle Ages. The centre of this plain requires a major settlement, for example the Neolithic village at Passo di Corvo which I discovered nearby (one of the largest in Europe). Arpi is *so big* that it baffled research. New methods, and 'earthwork' archaeology were essential!

Arpi received a considerable amount of Greek influence. Before it came to grief in the Second Punic War it was a powerful place and could supply a large contingent of troops. Under Roman rule it declined.¹ With this new information it will be possible to throw light on the vital problem of indigenous Italic towns, equally important to Archaeology and History.

JOHN BRADFORD.

THE 150TH ANNIVERSARY OF THE DANISH NATIONAL MUSEUM

The Danish National Museum at Copenhagen has this year celebrated its 150th anniversary. The official date for the inauguration of this very distinguished Museum is the 22 May, 1807, but as the 22 May this year fell in the middle of the visit of the Queen of England and Prince Philip to Denmark, the birthday celebrations of the Museum were celebrated before and after this date. They were celebrated officially with special ceremonies, a special exhibition of archaeological techniques in the Museum, and the publication of a splendid book on the treasures of the Museum. The official ceremonies included a meeting in the lecture hall of the Museum, at which greetings and good wishes were given personally by representatives of the National Museums of Finland, Sweden, Norway and Iceland, and a gala performance in the Royal Theatre. The King and Queen of Denmark attended both these functions and so recognized the great interest of the Danish state and people in their antiquities and their museum. After the theatre some eight hundred people sat down to an excellent supper in the galleries of the Museum; about midnight we moved out into the Lion courtyard of the Museum, which was gaily lit and

¹ Until now the best account of the site has been the article in the *Dictionary of Greek and Roman Geography* (1878 ed.), edited by (Sir) William Smith. See also *La Nuova Arpi*, Salerno, 1876, by Ferdinando Villani; and J. Bérard, *La Colonisation Grecque de l'Italie méridionale et de la Sicile*, 2nd ed., 1957, 368 seq. A Neolithic site at Arpi was excavated by Sig. Argardio Campi.

heated by overhead infra-red lamps. It is difficult to envisage these celebrations transferred to Bloomsbury, to think of hundreds of people milling around the courtyard of the British Museum in the middle of the night while cheerful waitresses served ice-cold beer through the small hours. Nor can one see a new English stamp to celebrate the jubilee of a Museum, or Stonehenge on our new £5 note. The Danes have two new stamps to celebrate the jubilee of their Museum; the 60-øre stamp has an attractive representation of the Trundholm horse and sun-disc, one of the most remarkable treasures in the National Museum. The new Danish 50-kroner note has, on one side, a pleasant engraving of a dolmen, and on the other the Church of the Holy Trinity in Copenhagen, in the loft of which the National Museum began as part of the Copenhagen University Library. The commemorative volume produced by the Museum—it is just entitled *The National Museum of Denmark*, edited by Aage Roussell, and costs £2 10s. in England—has a short account of the history and organization of the Museum by Dr Brøndsted, and 150 pictures of objects selected from the Museum's collections, each described in about 500 words.

Of course, the Danish National Museum is by no means the oldest archaeological museum in Europe. The Swedish Society for Antiquities was founded in 1666 and was charged, among other things, with establishing 'a sheltering place for the antiquarian objects which might be dug up from the soil'. The Ashmolean Museum was opened by James II when Duke of York; its basis had been Tradescant's 'Closet of Curiosities'. Similarly, the basis of the National Museum in Copenhagen was the Royal Curio Cabinet, which itself contained antiquities originally belonging to Ole Worm's famous curio cabinet. The date, 22 May, 1807, is really the date of the establishment of the Danish Royal Commission for the Preservation of Antiquities, and recently Victor Hermansen has described the political and academic negotiations that went on in Denmark to get this Commission established, and the part played by Professor Nyerup and Bishop Munter in all this.¹ If, to a large extent, Nyerup and Munter were the creators of the Commission and, as a result, the Danish National Museum, it is the brilliance of the first two curators which made this creation a reality. Christian Thomsen succeeded Nyerup as Secretary of the Commission and head of the Museum in 1816, and Worsaae succeeded him in 1865 when 'old Thomsen' died. Between 1807 and 1885 (the date of Worsaae's death) the foundations of modern prehistory were laid and the Danish National Museum under Thomsen and Worsaae had much to do with this. Thomsen was the first person to order a museum according to the three-age system of Stone, Bronze and Iron,² while Worsaae with his excavations and comparative researches and his wide European travels is, as the Danes claim, the first professional archaeologist and one of the major figures in European archaeology.

The directors and staff of the National Museum from 1885 onwards have built on the foundations so well laid by Thomsen and Worsaae. The present extensive buildings designed by Mogens Clemensen were opened in 1938. In its new home the Museum prospered under the direction of Paul Nørlund, famous for his discovery in Greenland of the Norse settlements of the Middle Ages and his excavation of the Viking Camp at Trelleborg. The present Director, Dr Johannes Brøndsted, who succeeded Nørlund in 1951, now rules over a Museum consisting of eight principal departments, of which the seventh is the open air museum at Sorgenfri, with its collection of farmhouses, mills, smithies and pottery workshops. It is pleasant and worthwhile at this moment to look

¹ V. Hermansen, 'Baggrunden for Oldsagskommisionen' in *Aarbøger for Nordisk Oldkyndighed og Historie*, 1953, 157 ff.

² On this see Daniel, *The Three Ages* (1943), and *A Hundred Years of Archaeology* (1950); G. Bibby, *The Testimony of the Spade* (1957), ch. I, IV and VII.

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back, as the Danes have been doing, and remember the men who founded the Museum in 1807. This year is also the 150th anniversary of the British bombardment of Copenhagen; Christian Thomsen was serving in the Copenhagen City Constabulary during this emergency; he has left us a vivid account of the siege and how he worked all through one night rescuing a large coin collection from a burning house. He carried the collection for safety to the Royal Cabinet of Curiosities and thus met Nyerup and the group of men who were agitating for the Royal Commission and a National Museum. We may thus claim, in a very curious and indirect way, some share in the beginning of Thomsen's career as a prehistoric archaeologist.

GLYN DANIEL.

EXCAVATIONS AT GLASTONBURY ABBEY, 1956.

A further season of four weeks was carried out by the Glastonbury Excavation Committee in August 1956. Trial trenches were cut in the north transept of the Great Church in order to recover this part of the Romanesque plan. It was found that the early 12th-century transept had two eastern apsidal chapels set en echelon. The plan as now recovered bears a very close resemblance to that of the late 11th abbey church at St Albans (A. W. Clapham, *English Romanesque Architecture after the Conquest*, 22). A skeleton was found buried in a wooden coffin directly in front of the altar of the inner chapel. The legs were cut through by the sleeper wall of the later chapel, thus associating the burial with the 12th-century church. The buckles holding the stockings were still in position on the thighs, showing that the man had been buried in his clothing and was therefore an ecclesiastic.

Both in the north transept and in the north-east corner of the cloister masonry was found belonging to a church earlier than that erected by Abbot Herlewin in the first quarter of the 12th century. The character of the walling shows that these remains must belong to the church begun by Thurstin, the first Norman Abbot. The plan of this building is still recovered only in part. It was cruciform with the crossing west of the later crossing and clearly on a much smaller scale than Herlewin's church.

At the lowest level in the transept a ditch about 20 ft. wide and probably 10 ft. deep was found. The ditch could not be fully explored in the restricted area of the 13th chapel. A similar ditch was located in 1935 at the west end of the later quire. The section uncovered in 1956 had silted to a considerable depth before the 11th century and it may be suggested that it belonged to the enclosure of the Celtic monastery of the early period.

Further work was carried out on the glass furnace located in 1955. This was shown to be one of several occupying the area that was later incorporated into the cloister. The furnaces were of comparatively slight build, the domed roof being broken down and reconstructed after each firing. After two or three firings the furnace was apparently disused and a new one constructed. Stratigraphically the remains can hardly be later than the early 11th century. The glass fragments recovered are of Carolingian type and a date in the 9th century is probable.

Work will continue in August 1957, when it is hoped to locate and excavate a section of the early ditch in an area less encumbered with later remains.

C. A. RALEGH RADFORD.

EXCAVATIONS AT BIRSAY, 1956

The excavation of the early Christian site on the tidal islet at Birsay, Orkney, suspended in 1939, was restarted by the Ministry of Works, under the direction of Mr Stewart Cruden and the writer.

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The main site, consisting of a small church with three ranges of buildings enclosing a small court on the north side of the nave, was explored in the 19th century and before 1939. A re-examination has shown that the church is to be identified as the 'splendid minster' erected by Earl Thorfinn the Magnificent (ob. *circa* 1065). This later became the first cathedral of Orkney. The building to the north is contemporary with later alterations to the church; it formed the Bishop's Palace and was probably built by William the Old in the second quarter of the 12th century. The church stands within a rectangular graveyard with numerous graves of the Norse period. At a lower level there are remains of a small building, a large series of graves and part of an irregular enclosure wall. These are of the pre-Norse Celtic period. The cemetery has produced the broken fragments of a symbol stone of Pictish type and a cross, both of the 7th or 8th centuries.

East of the churchyard, on the edge of the cliff, a large Viking house was uncovered before 1939. The upper level is of the 12th century. Below this is an earlier building, now in process of excavation. It has walls of well-formed masonry, similar to that of Thorfinn's minster. This older structure can certainly be identified as the Palace of Earl Thorfinn. The most interesting feature yet found is a hall, one side of which has been eroded by the sea. On the three sides are dais with a fire pit in the centre. Under each dais is a stone-lined duct leading back to a second firepit in a service room.

On the slope above the graveyard a number of viking houses of the type more fully explored at Jarlshof, Shetland, were located and partly explored before 1939. Examination of one of these buildings has shown that it had a long history with at least two reconstructions. The plan of the earliest building and the absence of pottery suggests that it goes back to the beginning of the Norse settlement in the 9th century and that it ceased to be occupied before the minster was built in *c.* 1050.

C. A. RALEGH RADFORD.

Reviews

DICTIONARY OF ANTHROPOLOGY. By CHARLES WINICK, Ph.D. *Peter Owen Ltd. London, 1957. £2 10s.*

This is a most disappointing book, and perhaps it was bound to be. The author, in his Preface, calls anthropology a 'sprawling' science and says that its field of activities includes 'archaeology, cultural anthropology, linguistics and physical anthropology'. Theoretically, of course, anthropology claims to be the science of man, but in practice no-one can cover the whole field thus described. People are archaeologists, cultural anthropologists, philologists or human anatomists; and while it is useful and beneficial for the students of each of these branches of science to have some knowledge of the others, they cannot nowadays speak with equal authority on all. That is why this book fails to give what the blurb describes as 'authoritative summary statements' about early man. That does not mean that it may not sometimes be found convenient as a book of reference, if used with caution. Any alphabetical arrangement of 10,000 words, many of which are not to be found in an ordinary dictionary, is bound to be found useful sometimes. The trouble is that, when tested, the definitions given very often turn out to be vague and unsatisfactory, and sometimes inaccurate and misleading. This criticism applies particularly to the archaeological definitions, but it is true also of some of the others. In the very first example of the latter which we chose as a test—the word *Dovekic*—we found a disagreement between Dr Winick's definition and spelling and that of the Oxford English Dictionary. Here we are primarily concerned with the archaeological contents; a few samples will reveal their quality.

The terminology of megalithic monuments is admittedly difficult and confusing, but it becomes more so when different definitions are given of the same thing. On p. 240 a Passage Grave is defined as 'a long funerary corridor made of upright slabs and covered with capstones'; while on p. 403 it is given again and defined simply as 'a long narrow burial chamber'. (Neither definition is correct; it is the burial chamber which is funerary and the corridor which is long and narrow.) The Greek word 'tholos' is used by archaeologists to denote a type of burial chamber which has much in common with Passage Graves and of which the most famous examples are found at Mycenae and in Crete and Spain. Yet these last instances are not mentioned in the description of 'tholoi'; and the author seems unaware, in his description of 'beehive tomb', that he is in fact attempting to describe the same thing. There is no entry for Mycenae, nor for such common terms as 'allée couverte', 'long cist', 'horned cairns', 'naveta', 'talayot', and 'chamber tomb'; but room is found for an obscure Italian word 'padiglione'—defined as 'an unroofed approach to a rock tomb'. 'Henge' is defined as 'a sacred stone circle, like those at Avebury and Stonehenge in England'; but the word was invented to describe just the opposite, namely, circular sanctuaries of earth or wood, where standing stones were not visibly present. Stonehenge is 'an ancient temple of the Druids', and 'sarsen stone' is 'a silicious [*sic*] sandstone block from a valley between Swinden [*sic*] and Salisbury in England'. (There are thousands of sarsen stones in several valleys south of Swindon; no mention is made of their use at Avebury and Stonehenge, nor is there an entry for Avebury.) 'Grimm's graves' are assigned to the Upper Paleolithic period; the roofs of the mines were held up by 'limestone posts', and the flint was dislodged by 'antlers used as picks'. (Grimes graves are the shafts of Neolithic flint mines; the 'limestone posts' are pillars of natural chalk left unquarried; and the antlers were used as wedges, not picks.)

It will be news to many that the Maglemosians lived on grass, that a watershed is the same thing as a river basin, that there were 'Hamitic inscriptions' in Ancient Egyptian in about 5000 B.C., and that 'comb pottery' (Kammkeramik) is so called because the pots are 'shaped like a semi-circular comb'. (The name is given to pottery *ornamented* with some comb-like implement.) It is confusing first to be told that 'Celtic pottery'—an absurd heading—dates 'from the period before the Roman conquest of Gaul and Britain', and then to be assured that 'the shards . . . appear to be pre-Roman in type'. (What else would one expect?). The entries under the heading 'Pottery' are conspicuously defective and contain such muddled and unhelpful remarks as that 'Greek pottery advanced from the Neolithic finds at Cnossus [*sic*] and from Egyptian types carried by Phoenician merchants' and that 'Etruscan pottery . . . was varied in kind'. It is news to learn that 'preman' was 'a human being of the fossil era', but not that 'archaeological evidence is largely used by the pre-historian'. (We thought that 'preman' was something *prehuman*.) The above examples could be multiplied indefinitely.

The style is slipshod and there are many misspellings and misprints. The Latin plurals 'strata' and 'tribula' are used as if they were singulars (for 'tribulum' and 'stratum'). 'Polychrome' is defined as 'referring to being of more than one color (i.e. monochrome), as in pottery'. Amongst spelling mistakes and misprints we noted the following: Saint Acheuil, Gibralter, vase (for base, p. 163), Phahlbauten, Ertebole, isohet, baiss (for basis, p. 339), miniscule, Ninevah, chieftans, Arthur Thomson, flour (for floor, p. 536), Baron de Greer, Kulterkreis. O. G. S. C.

EL YACIMIENTO HALLSTATTICO DE CORTES DE NAVARRA: ESTUDIO CRITICO—I. By JUAN MALUQUER DE MOTES. *Diputación Foral de Navarra, Institución Principe de Viana, Pamplona, 1954. pp. 200, with 92 plates, 63 text figures and 3 folding plans. 150 pesetas.*

That one of the most able of the younger Spanish archaeologists should have been called in to complete the excavation of Cerro de la Cruz de Cortes de Navarra after the death of Blas Taracena, who commenced it (1947), and to prepare the preliminary account now reviewed, is good cause for satisfaction among European prehistorians. The site is of the greatest interest to all students of the earliest phase of Celtic Iron Age culture not so much because it is 'the most complete Early Iron Age settlement in Spain' as the author claims, as for its stratification—a rare thing in Spain—and for the light it throws on the evolution of the house and its internal arrangements in a community which had its roots in the Urnfield Culture of West Central Europe. Actually the excavations at Cerro de la Cruz have yet to be completed and the published plan of the settlement is less complete than those of several other Early Iron Age settlements in Spain; in particular, it is still uncertain whether there was an enclosing wall, or whether the back walls of the contiguous houses lining some of the streets formed a defence for the settlement, as at some other Urnfield sites on the Ebro, e.g. Roquízal del Rullo.

Cerro de la Cruz is an oval mound near the banks of the Upper Ebro, in Navarre, about 115 m. from east to west and 77 m. from north to south; excavation has shown it to be a veritable 'Tell', largely formed from the decay and renewal of the adobe walls and floors of successive settlements built on a low hillock which originally rose only about 2 m. above the surrounding plain. During the earlier excavation campaigns the superimposed floor-levels established locally were given the value of general phases in the history of the settlement, but Maluquer, working on the site from 1952 onwards, has been able to prove that the same house often had its floor renewed at a higher level several times in its history but, of course, not necessarily at the same time as in other houses. It was

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discovered, however, that a burnt layer occurred in all parts of the settlement, representing a complete destruction of the village by fire, and this provided a means of inter-relating the sequence of layers in different parts of the site. On this basis Maluquer has defined an early phase (P. IIA) with pottery of late Urnfield (Hallstatt 'B') tradition, including *ceramica excisa*, as at Agullana I and Roquizal, a middle phase (P. IIB), to which the burnt settlement belongs, with abundant pottery and brooches of types characteristic of Agullana II—the former with cylinder necks and occasionally pedestals, not much incised decoration but traces of painted geometric patterns, and a late phase (P. Ia-b) in which pottery and metal types correspond to those of the localized Pyrenean late Hallstatt culture. Although the plans of the dwellings of these successive phases are crude, no drawn sections are given to illustrate the stratification, and the numerous photographs of houses and sections have generally suffered from reproduction, there does not seem to be good reason to doubt Maluquer's general conclusions.

Unfortunately the levels assigned to phase P. IIA have only been explored in a limited area, and no house plans are given; Maluquer admits that even earlier levels may lie undiscovered deep down in the central part of the mound. On the other hand the houses of the middle phase are exceptionally well known because the conflagration baked their adobe bricks and the collapse of their roofs and upper walls often sealed the complete contents of the living rooms, including jars containing grain. The fully developed house of this phase is an elongated oblong building entered from the street through a vestibule which leads into a main living room in which the hearth is located, and which in turn leads into a small innermost room which the contents in some cases show to have been a pantry. The walls are of sun-baked brick with a timber frame, sometimes standing on a foundation course of dry-stone walling, and the roof is sometimes carried by a central row of posts. A typical house is upwards of 50 ft. long and 15 ft. wide internally. In most of the houses there is a bench for household gear running along the left-hand wall from the main room into the pantry; the hearth is central and provided with a circular or subrectangular frame of clay, and sometimes there is a small post-hole just outside it in the direction of the street, probably for a post supporting a pot-hook. In a few houses there is a small square pit in one corner of the main room. This is thought to have held a sty or a coop; pig bones are common in the settlement. The antechambers or vestibules sometimes have painted wall plaster, with designs which Maluquer considers of great importance for the origin of the later Iberian vase-painting; a schematized human figure painted just above floor-level on one of these plastered walls is thought by Maluquer to be connected with the practice, common at Cerro de la Cruz, of burying infants under the newly-raised floor levels. The houses have common side-walls and line two streets running from east to west; after the fire the settlement was in due course rebuilt at a higher level with houses of a similar type, but with the street plan partly altered. The uniformity of plan and size of the houses in all these phases is very striking: there is nothing as yet to suggest different social classes in the settlement.

The burnt settlement at Cerro de la Cruz gives us a remarkably full picture of a western Urnfield community in the 6th century B.C., and it is to be hoped that its excavation will be completed and adequately published in due course. We need to know more about the character of the earliest settlements on this site, among other things because Maluquer himself has suggested in earlier writings that the distinct types of pottery found in the burnt level and the lowest level at Cerro de la Cruz are connected in Catalonia with two distinct immigrant groups, and the later one has a far wider distribution in the Iberian peninsula as a whole than the earlier one. That there was a substantial continuity of culture throughout the successive settlements, however, is shown by the appearance of

clay 'fire-dogs' of Urnfield tradition and clay dolls of Balkan affinity in the burnt layer, and the close resemblance of the house-plans in the topmost layers to those lower down. These house-plans make interesting comparison with those of Central Europe from Danubian II times onwards, and it is to be hoped that the opportunities for social and economic study presented by the household arrangements and food remains of this community of peasant agriculturists will not be missed.

H. N. SAVORY.
National Museum of
Wales, Cardiff.

DIE EINZELGRABKULTUR IN SCHLESWIG-HOLSTEIN UND IHRE KONTINENTALEN BEZIEHUNGEN. By KARL W. STRUVE. *Karl Wachholtz, Neumünster*, 1955. pp. 215, 14 figs., 36 plates. Price DM. 30.

Glob's valuable monograph on the Separate Grave culture of Jutland, published some twelve years ago, now has a worthy companion study, devoted to the Separate Grave Culture of the adjoining territory of Schleswig-Holstein. In it the main typological features of this Neolithic culture—shaft-hole axes and other stone objects, pottery, grave and settlement forms—are subjected to a critical analysis, while chapters of synthesis are devoted to such questions as the relationship between the separate grave culture and the Funnel Beaker (Megalithic) culture of Schleswig-Holstein, the position of the former in the development of cultures using cord-ornamented pottery in northern and eastern Europe generally, and the growth of distinct cultural provinces in the later phases of the Separate Grave culture in Northern Germany. There is a detailed inventory of grave groups and isolated finds covering Schleswig-Holstein, district by district, a large number of illustrations of implements and pottery, and several comparative distribution maps of the main types of implement and pottery, covering not only the area of the monograph but Denmark and the whole of Northern Germany, as far east as the Oder.

Struve's treatment of the familiar questions affecting the origin and role of the Separate Grave people is satisfactorily objective. He does not feel entitled, on the evidence so far available, to choose definitely between two possible points of departure for the corded ware groups—from somewhere near the area of the Funnel Beaker culture of Northern Europe, or from Southern Russia. He adheres to the old view that the Separate Grave people drove out or absorbed the Megalith-building Funnel Beaker people of the Jutland peninsula by successive stages; apparently Becker's paper on the Middle Neolithic cultures of South Scandinavia (*Acta Archaeologica*, xxv) which argues for a chronological gap between the decline of the Megalithic culture and the arrival of the Separate Grave people in most parts of the area, was not available to him. Struve's treatment of the Bell Beaker element in the Separate Grave culture of North-western Germany is salutary for those British prehistorians, who exaggerate the Nordic element in the Beaker culture of Britain. For him the Bell Beaker represents a true immigration, mainly from western, but partly from Central Europe, which strongly influenced the later stages of the Separate Grave culture of Schleswig-Holstein. The influence is reflected not only in the form and decoration of the local pottery, but by the appearance of barbed and tanged arrowheads and flint daggers closely related to those much more numerous daggers which the 'A-C' beaker complex of Britain is supposed to have brought with it from across the North Sea, but which Struve thinks were introduced by the Bell Beaker folk and copied by them from West European copper daggers. The fact that no true prototypes of 'A-C' beakers are found in Schleswig-Holstein (or elsewhere in North-west Germany) shows that the origins of pots and daggers must be sought further west.

H. N. SAVORY.

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ACTA ARCHAEOLOGICA, vol. XXV. Edited by C. J. BECKER. Copenhagen, Ejnar Munksgaard, 1954. pp. viii + 328, 206 text figures. 38 crowns.

The appearance of its twenty-fifth volume seems a fitting occasion to call attention to the merits of *Acta Archaeologica*. This is an international periodical controlled by an editorial committee representing Danish, Swedish, Norwegian and Finnish archaeologists and though it has been principally concerned with the prehistoric and medieval archaeology of Northern Europe, it has published many papers on classical and eastern archaeology. As its aim is to make the work of North European archaeologists known as widely as possible, its articles are written in English, German or French. The present volume reflects not only the high archaeological standards of the contributing countries, but the enlightenment and well-being of their public, which has enabled so massive, well-produced and lavishly illustrated a periodical to keep going in difficult times. Though its contents are concerned almost entirely with the pre-medieval archaeology of Northern Europe they include several papers of importance for general European archaeology. It is not possible to review all of them fully here but something may be said of the most important.

C. J. Becker's paper on the Middle Neolithic Cultures of South Scandinavia (in German) is an analysis of the numerous cultural groups now recognized in the area and their relative chronologies. The megalithic (passage grave) culture is taken as a common measure because it extends throughout the period and can now be divided into five distinct phases, and the other groups—surviving mesolithic, separate grave and pitted pottery—are correlated with these phases. This chronological refinement helps Becker to reach the conclusion that the decline of the Megalithic culture in most parts of Scandinavia preceded the arrival of the separate grave—battle-axe groups, and was not caused by it. The more or less peaceful co-existence of these various groups in Scandinavia for considerable periods should be attributed to the differences between their economies. Becker also contributes a lengthy note (in English) on the first segmented fayence bead recorded from Scandinavia—that from an otherwise empty cist in a round barrow at Fjallerslev in Jutland. He regards it as an import from Western Europe, and notes that the early-Aunjetitz horizon of the similar beads from East Central Europe, and the late-Aunjetitz horizon of the western ones, point to the existence of independent trade contacts between these regions and the Aegean at quite different times. C.-A. Moberg concludes a series of papers (in English) on the chronology and style of La Tène metalwork in Central and Northern Europe, and W. Holmqvist, in publishing (in German) an old discovery of a silver beaker with ox-head protoms found at Järnsyssla in Västergötland traces the influence of Roman prototypes on Gaulish and ultimately Scandinavian metalwork in the final La Tène phase. R. Nierhaus analyses again (in German) the evidence of imported Roman metal vessels for the service of wine in Central and Northern Europe and concludes that in fact little wine was imported and that the vessels normally contained beer. O. Voss studies (in English) a hoard of scrap silver, mainly from looted late Roman vessels, from Hostentorp, Denmark, and its significance for the typology and economics of the Folk-wandering period. Finally, E. Dyggve continues his report on excavations at an important religious site at Jelling in Denmark. Here a Romanesque church was found to have replaced a stave-church built in the 10th century by King Harald, which in turn replaced a pagan sanctuary used in the time of Harald's father, Gorm. The stave-church at Jelling is the oldest known in Northern Europe; while he recognizes the importance of Anglo-Irish missionaries for the spread of Early Christian architectural forms in Northern Europe, Dyggve is not yet prepared to decide whether this type of wooden church, with its central bell tower with its four mast-like supports, is of Nordic or alien origin.

H. N. SAVORY.

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THE OLD STONE AGE. By M. C. BURKITT. *Bowes and Bowes, London, 3rd Ed., 1955. 5½ × 8 pp. xii + 258, with 8 plates and 30 figures. 21s.*

This introductory handbook for students has proved its usefulness by running into a third edition. First published in 1933 as a basic introduction to the scope, methods and content of palaeolithic archaeology, there must be few of the younger generation of English-speaking prehistorians who were not brought up on it. As was to be expected, this edition has been brought up to date in respect of such matters as radioactive carbon dating, fluorine tests, pollen analysis and the Piltdown affair.

To cavil at the limitations which Mr Burkitt has adopted would be to misjudge the purpose of the book. 'The area covered', says the author, 'will be primarily restricted to Europe and the neighbouring countries . . . while in time the subject will not be pursued much further than the end of that major period of prehistory known as the Palaeolithic or Old Stone Age.' But a third of the book is devoted to Palaeolithic art, and one feels that some sacrifice in this section to allow for a somewhat more thorough treatment of the Palaeolithic in Africa would have been justified. The student can, of course, make good by broader reading with the aid of Mr Burkitt's useful bibliography, but one misses certain important references such as Dr Desmond Clark's books on Somaliland and Northern Rhodesia, Neville Jones on Southern Rhodesia, Leakey and Janmart's work in Angola and the excellent publications of the South African Archaeological Society. Until such gaps are filled, as we hope they will be in the next edition, the title *The Old Stone Age* remains rather too comprehensive. In spite of this, however, no student beginning his studies in prehistory can afford to be without this book and so to miss the benefit of Mr Burkitt's long experience as an outstanding teacher of the subject.

B. D. MALAN.

THE ABORIGINAL RACES OF INDIA. By S. S. SARKAR. *Calcutta; Bookland Ltd., 1954. pp. v + 151, 11 plates. Rs. 12.*

This concise but thorough little book summarizes in an admirably direct and lucid form the existing facts and sources available to the physical anthropologist for the study of the primitive peoples of the Indian peninsula. With the exception of the Khasi of Assam the primitive tribes of the north-east frontier of India are mostly excluded from this survey, which is primarily concerned with the Australoid (Dr Sarkar would perhaps prefer to say 'pseudo-Australoid'), Munda and Negrito elements of the peninsula proper and the Andaman Islands.

In Part II of his book the author reviews the material available for assessing the racial affinities of the more primitive tribes of India in five chapters which deal with the autotones—that is with the widespread quasi-Australoid element found almost throughout the peninsula and typified in the Vedda—with the Negrito element found in the Andamanese and believed by some to be present in a small degree on the mainland also, and with the problem of the Munda group; then with the material available as to the blood groups of all these peoples, and with their finger-prints studied as a racial character.

The first part of the volume consists of two chapters, one a translation by Dr Sarkar of an article by Professor Eugen Fischer on 'The Interrelationship of the Human Races on the Basis of Mendelian Characters', the other a reprint from *Man* (xxix, 1936) of Sir Arthur Keith's review of Dr Guha's 'Racial Affinities of the Peoples of India' in vol. 1, iii of the *Report on the Census of India, 1931*. These two chapters are printed by Dr Sarkar by way of justifying his contentions, firstly that the evolution and determination of some at any rate of India's racial types probably took place in the peninsula itself, and secondly that the Negrito strain in the Andamans, and likewise on the mainland if indeed

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it is to be found there at all, which is unproved, is due possibly if not probably to a local mutation.

Although these views of Dr Sarkar are unlikely to meet with unqualified acceptance by anthropologists generally, they are clearly not to be summarily rejected. Perhaps it will be difficult to come to any final conclusion on the physical question independently of cultural considerations. The author's views are stated with modesty and moderation, his facts are lucidly set forth, and he has made a serious contribution to the study of race in India. The quality of his illustrations is not so high as the text deserves, but the printing is good and commendably free from misprints on the whole ('Feugian' appears for 'Fuegan' in both text and index); references are given throughout, but in dealing with the problem of the Munda languages Sir George Grierson's endorsement of their affinity to the Mon-Khmer and Nicobarese groups should not have been overlooked, nor the relevant volume of his *Linguistic Survey of India* omitted from the bibliography of Chapter V.

J. H. HUTTON.

ATTIC BLACK-FIGURE VASE-PAINTERS. By J. D. BEAZLEY. *Oxford University Press* (London: *Geoffrey Cumberlege*), 1956. pp. xvi + 852. 6 guineas.

It is probably true to say that the pottery of no other ancient culture is as susceptible to close stylistic analysis as that of Greece, and in particular that of Attica in the archaic and classical periods. Quite small fragments can be assigned to painter and potter, and a close dating determined from the great nexus of historical fixed points, dateable scenes, tomb groups, etc., which have been debated by classical archaeologists for the last generation or so. In the work under review are presented the lists which form the basis for the dating of Attic pottery of the 6th and early 5th centuries B.C., although we have to turn to the author's other works for the actual dates which can be given to groups and individual pieces. About 8000 vases are here assigned to painters or stylistic groups, and they represent, in the publisher's words, 'a good proportion of all extant black-figured vases and fragments'. This is of course an undertaking which few scholars could have attempted, and perhaps no other have carried out so successfully. It is not only the classical archaeologist who will profit from it, for the popularity of Attic pottery in antiquity meant that it travelled far, and students of more than one contemporary culture have reason to be glad that their folk liked it well enough to take it into their houses, or with them to their graves. The techniques of close study which have led to this command of the material might also well and profitably be applied to the decorated wares of other cultures and periods (even in Greek lands), where arbitrary classifications still confuse more than they elucidate.

As well as this significant contribution for the 'dirt archaeologist' the book also provides the background to the artistic life of archaic Athens as represented in her best known and most plentifully preserved works of art, her vases. Here can be traced the schools of painters, and the styles that died hard or enjoyed a brief but vigorous popularity; but the presentation, in the form of lists and ample indexes without illustration, is for the specialist and not for the general reader who is better referred to Beazley's *Development of Attic Black-figure*. The specialist, too, will welcome this monumental companion to the author's similar treatment of red-figure vase-painters, and can express, with his congratulations, his confidence that, although it appears in the year of Sir John Beazley's retirement from teaching in Oxford, it will not be the last of his brilliant contributions to classical scholarship and archaeology.

JOHN BOARDMAN.

THE TEMPLE OF NEHALENNIA AT DOMBURG. By ADA HONDIUS-CRONE. *Meulenhoff, Amsterdam, 1955 (received March 1956). pp. 123, with 2 text-figures and 44 plates. Price not stated.*

On 6 January, 1647, erosion by the sea, following a severe storm at the end of the previous year, uncovered at the village of Domburg on the island of Walcheren the relics of a temple and a number of carved and inscribed altars and other objects connected with the cult of the mysterious Rhineland goddess Nehalennia, whose name, nowhere mentioned in ancient literature, is known to us solely from epigraphical sources. For a couple of centuries the stones from this site were housed in Domburg church, where they were largely destroyed in 1848, when lightning struck the tower and the roof of the building collapsed upon them. Fortunately, in 1845 L. J. F. Janssen, curator of the Leiden Museum of Antiquities, had published a series of lithographs, accompanied by short descriptions, of the altars; and in 1866 the survivors were removed to the Middleburg Museum, where they were seen and photographed in 1925 by Espérandieu, who incorporated them in volume IX of his famous *Recueil*. But the valuable monograph under review presents the first complete picture of Nehalennia and her worship as the Domburg finds, together with two inscribed altars (now lost) erected in her honour at Deutz, near Cologne, have revealed them to us. The authoress has thoroughly combed the 17th century and later records and sketches relating to Domburg, she has sorted out afresh the Middelburg fragments, and she has brought into relation with them four altars from the site which had found their way to other museums—three to Leiden (Nos. 5, 7, 25) and one to Brussels No. 9).

The result of these researches is a catalogue of forty-eight items certainly relating to Nehalennia—mostly stones (many altars and a few architectural pieces), but including one bronze statuette (No. 39), two series of coins (Nos. 46, 47), and a number of potsherds (No. 48). Wherever possible an 18th- or 19th-century drawing of a given object and a new photograph of the same object as it appears today are reproduced side by side. Some items now survive only in drawings. The catalogue is preceded by a history of the find and an account of what is known of the temple site; and it is followed by a chapter on the name, appearance, dress, attributes, and character of Nehalennia; on the other deities found in her orbit; and on various scenes and objects featuring on her altars. But we should have welcomed a somewhat fuller discussion than the authoress provides of such important questions as those of the goddess's functions and of the nature of her worshippers.

Only a few points of detail can be considered here. In Note 60 the authoress rejects out of hand the identification as Nehalennia of the goddess seated with dog and fruits on an altar from Cologne (F. Fremersdorf, *Die Denkmäler des römischen Köln*, II, 1950, pl. 30), on the grounds that that goddess has hanging locks, does not wear a cape, and is seated on a high-backed wicker chair. But might not the pinned-up hair, cape and elaborate throne be peculiar to the local Domburg representations of Nehalennia? That she was worshipped also at Cologne the two Deutz altars show; and it may well be that slightly different ideas of her seating and appearance were current there. The attributes of the Cologne goddess, dog and fruits are, after all, two of the key attributes of Nehalennia and link her more closely with the latter than with the more usual types of mother-goddesses (whose iconography, incidentally, also varies very considerably). Nehalennia may, indeed, be represented in a series of clay figurines of north-Gaulish origin showing a goddess seated in a high-backed chair and holding on her lap a dog. An example came to light in 1947 at Canterbury (F. Jenkins, *Archaeologia Cantiana*, LXV, 1952 (1953), pp. 131–3, with plate). A similar stone statuette is in the Vindonissa Museum.

On p. 108 the authoress comments on an interesting and unusual feature of four of the Domburg altars—the sculptured curtain draped across the back of the piece and held

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in place by two large, round-headed nails, which pierce its upper corners. This, she thinks, is more likely to be a reminiscence of a real curtain for practical use than a symbolic reference to the after-life, as it undoubtedly is when suspended behind the figure of the dead on works of funerary art of all kinds. Yet it is hard to see what purpose a curtain could have served as a screen or protection on an altar-back; whereas, given Nehalennia's other-world connexions, it could suitably betoken here either the vault of the sky in which the soul has gone to dwell (hence its occurrence on a Jupiter altar: Note 96) or/and the garment of the body left behind at death.

On p. 111 it is said that 'current excavations may shed new light' on the Victory of Samothrace. They did indeed do so, several years ago; and they showed that the statue had nothing to do with the naval victory of Demetrios Poliorketes in 240 B.C.

The English of the text is good, apart from occasional errors, such as 'photographies' for 'photographs' (p. 19), 'streams' for 'currents' (p. 19), 'zigzag' for 'key-pattern' (p. 50), 'statues' for 'reliefs' (p. 101), 'piedes' for 'pilasters' (?) (p. 104), 'cultic' for 'cult-' (p. 108). There are also a few minor misprints. J. M. C. TOYNBEE.

DE GALLO-ROMEINSE TEMPELS TE ELST IN DE OVER-BETUWE (NEDERLANDSE OUDHEDEN I). By J. E. A. TH. BOGAERS. 'S-Gravenhage, 1955. pp. xxiv + 262, with 48 plates. Price f. 20.

This book is written in Dutch, but it is considerably provided with English and German summaries (on which alone this review is based). The main bulk of it consists of a full, scientific report on the excavation in 1947 of two Romano-Celtic temples beneath the ruins of the Gothic parish church at Elst (and of its earlier medieval predecessors), destroyed in World War II. But the work also contains a valuable survey of Celtic, Romano-Celtic, and Romano-German temples in general and an account of all the other eleven shrines in the region of the Low Countries that are known to have existed in the Roman era. There is a comprehensive bibliography and a short index. The illustrations are generous in quantity and good in quality.

Temple I at Elst was a small and simple rectangular structure. Temple II, also rectangular and built over the site of its ruined predecessor, was quite an imposing affair, with a low *podium*, a flight of steps leading up to its door, and a lofty *cella*, which probably projected, as a kind of clerestory, above the pentice roof of its surrounding porticoes. These were composed of Corinthian columns with caps of characteristically Rhineland type; and the excavators have restored twelve columns on the long sides and ten at front and back. The finds include some striking fragments of painted wall-plaster (the designs are reconstructed in colour on plates 20-24) from both temples. Most of the fragments from Temple I show imitation marbling; while those from Temple II reveal portions of plain panels with elaborate flanking *candelabra*—a provincial version of Italian Fourth-Style wall decoration. One piece of wall-painting from Temple II is notable as bearing a Greek graffito.

Temple I, the earliest known stone building in the Netherlands, was presumably built in the reign of Claudius and destroyed by fire during the Batavian revolt of A.D. 69-70. Temple II is of Flavian date and seems to have lasted well into the 3rd century. Both shrines reflect the impact of Romano-Celtic culture on the local native population and the normally happy relations that characterized the dealings of the Roman government with the Batavians.

Dr Bogaers' book makes an important contribution to our knowledge of social life, religion, and art on the north-west outskirts of the Roman world. J. M. C. TOYNBEE.

POMPEII: THE CASA DEI DIOSCURI AND ITS PAINTERS (MEMOIRS OF THE AMERICAN ACADEMY IN ROME XXIII). By L. RICHARDSON, JR. 1955. pp. xix + 165, with 58 plates. Price not stated.

Nothing reveals the daily life and social history of the past more intimately than the story of a house. That of the Casa dei DioscURI at Pompeii (its reference number is VI, ix, 6/7), published here in lavish detail, covers a span of roughly 170 or 180 years, from the time of the founding of the Roman Colony down to the city's destruction. Named after the principal figures painted in its *fauces*, it stood in a fashionable street, close to the Forum and its adjacent public baths, and was itself a mansion of considerable pretensions. It underwent a complicated series of internal changes, but in its main phase comprised a large Corinthian *atrium*, a pseudo-peristyle, a great peristyle with a grandiose *oecus* opening off it, and the much smaller, and somewhat older, house that immediately adjoined it on the south, the *Domus Caetroni*. This dwelling, originally quite distinct, was acquired by the Casa's proprietor, incorporated in the latter's home, remodelled for his own family purposes, and may, at the end, have been turned over to the use of a son who married and needed a separate establishment. Chapter I describes, room by room, in minute detail, the house as the early 19th-century excavators found it; while Chapter III reconstructs, on the basis of a most careful and vigilant survey of the existing construction, its architectural history. It would have been convenient if the points of the compass had been marked both on the plan illustrating Chapter I and on the chart, accompanying Chapter III, on which the six building-periods on the site are indicated in different colours.

In Chapter II the author extracts from an inscribed seal and from a series of graffiti scratched on the Casa's façade, some interesting information as to the names, status and connexions of the family that owned it. Its luxury and beauty attest the owners' wealth; and there is some archaeological evidence to show that their business included traffic in, and even the manufacture of, ornamental bronzes.

But the central importance of the Casa dei DioscURI is as an unrivalled document of Fourth-Style mural painting; for its walls were almost wholly redecorated in that manner after the earthquake of A.D. 62. And the outstanding interest of this book is in its final Chapter V, in which the author sets out new and, to the reviewer's mind, extremely sound criteria for distinguishing the works of individual personalities among the Pompeian artists. Seven masters active in this house are selected for special study, their style, as shown in the forms of the human body, arrangement of drapery, palette, handling of light, and composition, is minutely analysed, and lists are drawn up of the pictures, both in the Casa and elsewhere, that can, with reasonable assurance be assigned to their hands. In the absence of coloured reproductions it is impossible to check all his points and arguments. But so far as form and line go, it is obvious that he is blest with a keen and discerning eye; and he has definitely outdistanced his predecessors in this most important and rewarding field. If he extends, as he promises to do, his studies on these principles, he will certainly add much to our knowledge, not only of the paintings, but also of the methods and scope of work, social standing, and even professional reputations of the painters. One extremely significant point has already emerged. The various Pompeian wall-decorators, even when their works were ultimately inspired by famous 4th-century and Hellenistic Greek paintings, were remarkably original and individual in their treatment of a given theme. In this department, at least, of Graeco-Roman art mechanical copying of earlier masterpieces was manifestly not in question.

J. M. C. TOYNBEE.

REVIEWS

THE BABYLONIAN LAWS. *Edited with Translation and Commentary* by G. R. DRIVER and JOHN C. MILES, KT. Vol. II. *Transliterated Text, Translation, Philological Notes, Glossary*, 1955. pp. vii, 426. Oxford at the Clarendon Press. Price (in U.K. only) 63s. net.

All students of Semitic languages and history will welcome with gratitude the completion of the great work on the Babylonian Laws, of which the first volume appeared in 1952 and was reviewed in this journal. One has only to compare Harper's edition of the *Code of Hammurabi* which appeared in 1904, with the two volumes which the learned labours of two distinguished Oxford scholars have now given to the world, to arrive at some estimate of the immense advance in Semitic and allied studies which has been attained during the last half-century. A faint regret might be felt that this edition does not include a photographic reproduction of the text, for which students must still have recourse to Scheil. But such an addition would have increased the size and cost of this edition beyond bounds.

The present volume contains the transliterated text of the Code with an English translation and philological commentary. It also includes the remains of all other known Babylonian laws. A most valuable feature is a glossary, which is also a lexicon, of all the words used in these documents. The student of Accadian will also be grateful for the attention which is given in the commentary to matters of grammar, both accidence and syntax. The Old Testament student will find many notes which elucidate the bearing of the Code upon Israelite law. It is hard for the non-initiated to realize the enormous labour and meticulous skill which have been expended upon this monument of Semitic scholarship, and it is probable that, for this volume, the major part of the burden must have fallen upon Professor Driver.

Comparison of details in translation, as between Harper and Driver, shows that Driver has adhered much more closely to the letter of the text, to the great advantage of the student. For example, where Harper renders the common phrase *ana simtim ittalak* simply as 'died', Driver renders it 'went to his (or her) fate'. The value of the literal rendering here is that it shows that in certain ritual and historical texts where a *puhu*, or ritual substitute for the king is in question, the use of the expression 'went to his fate' in connexion with the substitute can imply a natural death, as Labat has argued.

This may seem a small point, but it is typical of many cases where the literal translation is of value in elucidating some disputed issue. Another small point that is a welcome improvement on Harper is the arrangement of the translated text in lines which correspond to the lines on the stele itself. This is a great help to a student who is working on a facsimile of the original.

The authors' view of the importance of the Code and of its relation to the other collections of ancient Semitic laws was set forth in the first volume, so that it calls for no further remark here; but it may be said that much additional light on this matter is to be found in the exhaustive commentary of 290 pages which follows the translation. In expressing one's profound gratitude and admiration for this great achievement, one can only feel a regret that Israelite law will not have the benefit of similar treatment from the same hands.

S. H. H.

THE ALL-KNOWING GOD : Researches into early Religion and Culture. By RAFFAELLE PETTAZZONI. *Authorized translation* by H. J. ROSE. 1956. Methuen and Co. pp. xv + 475. £3.

Professor Pettazzoni is to be congratulated in the first place in having his great work translated by a scholar of such eminence as Professor Rose, who is not only a master of

English prose, but also an adept in the arcana of which the Italian professor's book treats. In reviewing translated books the reviewer has so often to deplore the translator's ignorance of the subject-matter of the work which he is translating.

The subject which Professor Pettazzoni has chosen for investigation is a very interesting and far-reaching one, involving research into many remote recesses of comparative mythology. On its representational side there is a vast amount of iconographic material, ranging all over the world. We have Sumerian and Babylonian seals with representations of the mysterious two-faced god; there are the curious theriomorphic figures covered with eyes on early Greek vases, and Ezekiel's cherubim accompanied by their wheels whose rims or felloes were 'full of eyes'. We have in Egyptian mythology the eyes of Horus, thought of as the sun and the moon, respectively. This particular aspect of divine omniscience alone is traced out across time and space from Sumer and early Egypt to Maya and Aztec culture, and is amply illustrated. Among the various explanations of the Sumerian two-faced god referred to by the author, one which has not been mentioned is the suggestion that this figure, generally found in ritual scenes, may represent the old and the new year.

One very important aspect of the subject, to which Professor Pettazzoni has devoted special attention, is the much-vexed question of 'high gods'. He does not accept the views of Andrew Lang and Wilhelm Schmidt on 'primitive monotheism', which he characterizes as 'assigning the Supreme Being in his ideally purest form to human culture at its supposedly most primitive phase'. He very rightly insists on the necessity of dealing with the problem of the relation of the Supreme Being to a particular type of culture on a 'rigorously exact historical basis'. Hence his book marks an important advance on those methods of approach which were dominated either by purely linguistic considerations, as in the case of Max Muller, or by theological interests, as in the case of Father Schmidt.

In his Epilogue, Professor Pettazzoni sums up his own approach to this problem in the following words: 'The idea of the Supreme Being is not the reflexion of an abstract monotheistic idea of God made up of all the highest attributes theoretically inherent therein, one of which is omniscience. It is a concrete historical formation which takes different shapes, including at times diverse attributes, according to the cultural environment in which it appears. There is in every culture an intrinsic ideal nexus between the elements which make it up. Religion is one of these elements, and the Supreme Being is part of religion.' In pursuance of this principle the author points out that an earth-deity is not an all-seeing divinity, 'because the faculty of sight is foreign to her opaqueness and darkness, and omniscience depends on sight'. On the other hand, the supreme sky-god who as such is omniscient belongs to a world which is not that of the genuine farming cultures, and it is in such an environment that the typical complex of divine omniscience took shape. The historical approach is particularly well illustrated in the discussion of the conception of Jahveh's omniscience. Jahveh seems to have been originally a sky and weather god, so that as against many Old Testament scholars the conception of Jahveh's omniscience, especially in punitive activity, is older than the prophets, and was not derived from external sources. During the early stages of Israel's settlement in Canaan, Jahveh came to be confused with the local fertility Baals, with the result that his omniscience was obscured and his authority limited to Israel and to life on earth; his writ did not run in other countries, nor in Sheol. But the 8th-century prophets and their successors restored the idea of Jahveh's heavenly character and universality, and with it restated and re-emphasized the concept of his omniscience.

This is beyond doubt a really great book, worthy to rank with the great collections of earlier days to which the author pays due homage, chief among which is the late A. B. Cook's monumental *Zeus*.

S. H. HOOKE.

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